Title: The role of vocabulary learning strategies in lexical progression in an ESL context

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Doctor of Philosophy

2017

University of Bedfordshire

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By

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A thesis submitted to the University of Bedfordshire in partial fulfilment of the requirements for the degree of Doctor of Philosophy

2017

DECLARATION

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The role of vocabulary learning strategies in lexical progression in an ESL context

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Abstract

This study explores vocabulary learning strategies (VLSs) behind the lexical progression in adult learners assessed by productive vocabulary tests. Previous research has provided some insights into this issue (Ahmad, 1989; Gu and Johnson, 1996; Wu, 2005). Such research, however, tended to focus on individual or a small number of strategies, and very few studies looked at a group of VLSs as a whole (e.g. Schmitt, 1997) particularly in the Pakistani tertiary ESL context. This large-scale, longitudinal study was therefore designed to fill this gap, by examining the impact of some curricular and extra-curricular VLSs on vocabulary gain assessed by two types of a productive vocabulary test.

The two types of test (i.e. general and course-related vocabulary tests) were administered twice to 578 Pakistani tertiary students who were learning English as a second language with a one-year gap in between to assess the learners' vocabulary progress. They also responded to the VLS questionnaire to report on the VLS they adopted, and 120 of them also took part in four weeks' structured vocabulary learning diary reports (N=120 x 4 weeks) as well as interviews to elaborate on their VLSs use.

Wilcoxon Signed Ranks tests identified the learners' significant vocabulary gain between the pre- and post-tests. A series of multiple regression analyses showed extra-curricular, self-initiatives and selective-attention strategies significantly predicted general vocabulary progress, whereas the curricular, dictionary for comprehension, association and imagery and selective-attention strategies

turned out to be best positive predictors of course-related vocabulary progress. Structured weekly diary reports and interview data indicated complex nature of VLSs use, such as the use of certain VLSs in particular contexts and two or more strategies in combination. Students who progressed in both general and course-related vocabulary seemed to use a variety of strategies in combination, and their balanced and integrated approach appeared to be the most efficient in general and course-related vocabulary progression.

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Acknowledgements

I acknowledge the guidance and support of my supervisors and I owe my deepest gratitude to Dr Fumiyo Nakatsuhara, Dr John Field and Dr Chihiro Inoue for their considerate advice, encouragement and constant support. I would like to thank them for their patience and believing in my potential during the entire PhD journey. I would also like to express thanks to Professor Stephen Bax for taking me on in the first place, helping me through the early stages, for reading my thesis and giving me suggestions at the final stage of my PhD. I would like to extend my appreciation to the examiners, Professor James Milton and Dr Andrew Davidson for their insightful comments and advice on improving this thesis.

I am grateful to the Research Graduate School (RGS) and Centre for Research in English Language Learning and Assessment (CRELLA) for providing extra research and statistical analysis training and opportunities to present and discuss my work at Postgraduate Research Forums. I am grateful to CRELLA for funding me to present my work at national and international seminars to get an expert feedback. I would like to extend my thanks to all staff members of CRELLA, who provided valuable insights on my work. In particular, I would like to thank Professor Lynda Taylor, Professor Anthony Green, Dr Chihiro Inoue and Dr Sathena Chan for their suggestions on my quantitative analysis and their participation in a series of expert focus group discussions to inform the *marking scheme* used in this study. I am grateful to Dr Chihiro Inoue for many insightful

discussions about qualitative analysis and for reviewing the Chapter 5 of the thesis.

I am also grateful to Professor Paul Meara, Professor Norbert Schmitt and Associate Professor Peter Gu for listening to my presentations and giving me feedback to improve my work. I am grateful to Associate Professor Peter Gu for sending me his published material and for giving me suggestions on my work throughout my PhD by answering questions I emailed to him, and I would like to thank him for his illuminating answers about various aspects of his work. He took time out of his busy schedules to answer questions from somebody who was not his student, and some exchanges went to a considerable length.

I am also grateful to the teachers in the SKANS School of Accountancy and Professional Academy of Commerce (PAC) for sanctioning their consent to conduct the research during their classes, and to many students who participated in the study. Without their participation, the research could not have been successfully completed.

Above all, I am thankful to my family and friends, as always. Last but not least, thank you - my sons, for letting mummy spend so much time in front of the computer. Thanks for inspiring me to continue with this work.

To all of the above, thank you. This dissertation could not have been attempted or completed without you.

Chapter 1 Introduction

1.1 Context of the Study

Pakistan is a federal parliamentary republic in South Asia. It is the sixth-most populous country with a population exceeding approximately 197 million people. The use of English as a second language (L2) in Pakistan dates before the creation of the country which was first introduced by the British rule in the 16th century (Mehboob, 2009). English is the official language of Pakistan (Rahman, 2008) which is studied as a compulsory subject from early years of education.

Based on the researcher's experience as an English teacher in the Pakistani education context, it has been observed that Pakistani tertiary students found it tough to learn and remember English vocabulary. It seems that more teacher-centred approaches to teaching English are used in Pakistan. On the other hand, due to the cultural and religious impacts, Pakistani tertiary students tend to be more dependent on their teachers especially in state universities. Students require language learning strategies and vocabulary learning strategies training to fulfil their L2 learning needs.

Since the decline of Martial Law situations in Pakistan, the Ministry of Education Pakistan is putting much effort to upgrade education systems in Pakistan. However, research work in Pakistan is still in the inadequate situation due to the lack of funding and research training (Memon, 2007). There is a call for empirical studies on English learning and vocabulary learning as this sort of the research

work is expected to facilitate students, educators and policyholders in Pakistani ESL context.

1.1.1 Pakistani profile

1.1.1.1 Demography

Pakistan is the sixth largest country in the world with almost 176 million people (Government of Pakistan, 2011). The country has a large Muslim majority and there are approximately 174 million Muslims who live in Pakistan (Miller, 2009), constituting 96% of the population which turned Pakistan into the second largest Muslim population in the world. Urdu is the National Language of Pakistan whereas English is taught as a second language. It is estimated that approximately there are 72 local languages currently in Pakistan (Lewis, 2009).

Pakistan had been a British colony like most parts of South Asia which began with the trade establishment of the East India Company in the early 17th century and continued for two centuries. The British colonial rule was over in 1947. However, the British left the strong influence of trade, language, culture, religion and education in South Asia which is strengthening even today. Pakistan had recurrent involvement of military regimes for 33 of its 64 years of existence until 2008. The country is now democratic. However, its democratic system is still in a challenging situation due to terrorism threats to Pakistan. Pakistan scores particularly poorly for its security tackle (Fund for peace, 2011) and is classified as a country with low human development by United Nations (UNDP, 2011).

1.1.1.2 National language

Urdu has often been associated with the language of Muslims during British rule for many centuries (Rahman, 1999). The two-language policy was adopted by the British colonial administration in Indo-Pak subcontinent until 1880 1) English education was restricted to a small elite cadre of local rulers and administrators 2) the education to the Muslims was provided through the medium of Urdu. Due to the implementation of this policy, English became the language of power and prestige whereas the other local languages including Urdu were significantly neglected. However, Urdu became the National language of Pakistan after the independence from the British Raj and now is widely understood and used as an official language in the country.

1.1.1.3 English as L2 in Pakistan

Coleman (2010, 2011), Seargeant and Erling (2011) and Wedell (2011) identified the roles that English plays in the developing countries like Pakistan. For example, Coleman (2010) conducted a large-scale study on English as a second language learning in Pakistan which provides a profile of Pakistani demography, national language and a role of English as L2. The study was conducted to design new policies to facilitate English learning by British Council Pakistan.

In Pakistan, the role of English is quite significant as it is the language of the government, the military and higher education. It is the language of power and the language of an elite class that has conquered the country since its independence on 1947. Coleman (2010) categorised Pakistani schools into four

groups. The *elite private* schools are accredited with British Education system and their mode of learning and communication is totally English. However, schools run by the armed forces, non-elite English medium schools, and state schools follow Pakistani education system. They also use English as the medium of instruction due to the Government new policy. In 2010 the Government of Pakistan decreed that English should be used as the medium of instruction for the teaching of science and mathematics in schools which increased the need for Teachers' education and training to fulfil the new policy.

Due to the current policies and role of English, English literacy is taken as a compulsory part of education from Kindergarten till bachelor degree. Students need to pass English literacy as a compulsory module and mode of communication for rest of the other modules is also English. Due to the globalisation and current situations, the English language is necessary to achieve good grades, good jobs and foreign relations in Pakistan.

1.1.1.4 Applied Linguistics in Pakistan

Capstick (2011) surveyed the current research and research needs in Pakistan and identified that there is a lack of applied linguistics research in Pakistan due to the non-availability of funds and lack of education and training in conducting these types of research work. Rahman (2010) identified that Pakistan does not have Applied Linguistics departments similar to the well-recognised universities in other parts of the world, though Linguistics courses do exist within English Literature departments across the country. Due to this, most of the Applied

Linguistics research carried out by local researchers in Pakistan can be questionable and does not fulfil the International criteria (Capstick, 2011).

Obtaining a Master's degree in English Literature is one of the criteria which are necessary to work as an English teacher in Pakistan. Due to this situation, English literacy is often taught by teachers with a very brief knowledge of applied linguistics in Pakistan and the emphasis that is given to rote learning and literature. English Applied Linguistics is a relatively new subject in Pakistan's universities but it is being taught at the undergraduate and postgraduate level in some universities in Pakistan as the government recognises the significance of applied linguistics and is putting more emphasis on it now by sanctioning extra funding to the Higher Education Commission (HEC). The HEC has been offering an extensive programme of training and funding for English faculty at public sector universities to update their skills in communicative language teaching as well as additional courses such as Research Methods training. The universities are also introducing the short courses in English in which a TESOL Certificate/Diploma is a component.

1.2 Background of the Study

In learning a language, the development of a successful command of vocabulary is a constant need throughout all levels of proficiency. Read (2000) emphasises that words are the fundamental building pieces of language from which larger structures, for example, sentences, paragraphs and entire texts are shaped. Read (2000) further elaborates that for native speakers, although the rapid language

development happens at the young age of their childhood, vocabulary information keeps on growing normally in grown-up life because of new encounters, innovations, ideas, social patterns and more chances for learning. For L2 learners, vocabulary acquisition is commonly a more challenging and lengthy process (Gu and Johnson, 1996). L2 learners encounter lexical gaps, i.e., sometimes they encounter words which are not comprehensible to them or ideas which cannot be expressed by these learners as appropriately as they could in their first language (L1). L2 learners often struggle and complain due to the difficulties of vocabulary learning which is compulsory to learn the language (Gu, 1994). Learners get challenged with vocabulary learning at the early stages of foreign language learning, and this difficulty never ends. Learners initiate the use of vocabulary learning strategies (VLSs) to handle these challenges caused in learning vocabulary (Gu, 2012b). Given such continuous challenges that L2 learners face with vocabulary learning and the potential usefulness of VLSs for their learning, it is valuable and theoretically thought-provoking to research the adopted VLSs of learners to learning vocabulary and to determine the value of applied strategies (Gu, 2012b).

Schmitt (2000) notes that teaching methodology is shifted from teacher-centred approaches to more communicative learner-centred learning where learners can make their choices about their learning styles and methods. These learners-centred communicative methods introduced the independent learning of vocabulary to the L2 learners, i.e., to train ESL learners for the real-life communicative situations outside the English classroom. The practicality of the

theory of self-directed learning of language and vocabulary gave rise to the research into the area of second language learning strategies (e.g., Naiman et al, 1978; O'Malley et al, 1985; Rubin, 1987, Skehan, 1989; Oxford, 1990) and vocabulary learning strategies (e.g., Ahmad, 1989; Gu and Johnson, 1996; Schmitt, 1997; Tsai and Chang, 2009; Van-Zeeland and Schmitt, 2013). Most of these studies on VLSs have been either descriptive or experimental in nature. These studies in the field of VLSs emphasised the significance of VLSs or explored the patterns of adopted VLSs of successful and unsuccessful learners. Schmitt (1997) highlights that the research work which has been done on vocabulary learning strategies has focused individual or small numbers of vocabulary learning strategies, with very few studies focused the group of vocabulary learning strategies as a whole. The existing state of the area is epitomised by the lack of an inclusive list or taxonomy of vocabulary learning strategies. To the researcher's knowledge, there is not any study which has combined quantitative and qualitative methods with a longitudinal research design focusing curricular and extra-curricular VLSs in the Pakistani and also in overall English as a second language (ESL) context. As far as Pakistani ESL context is concerned, this might be due to the lack of funding and lack of research training in Pakistan as a result of the long regime martial law which ended in 2013. Gu (2012b) speculates in relation to overall ESL context that this research gap is due to the difficulty in manipulating an effective vocabulary size measure that very few studies have investigated the impact of VLSs on the progress of vocabulary.

Schmitt (2007) proposes that vocabulary learning difficulties can be controlled by applying specific vocabulary teaching and learning in a principled way. For example, these difficulties may be minimised by using curricular and extra-curricular VLSs to learn vocabulary during English lesson and independent self-study outside the class. Vocabulary learning involves VLSs and other behaviours which learners adopt consciously or unconsciously (Nation, 2001). It is recommended that "one of the ways teachers can aid this process is by helping learners become aware of and practised in using a variety of VLSs. Research shows that many learners do use strategies for learning vocabulary" (Schmitt, 2007, p. 755). Previous studies identified the profiles of learners indicating that not all the students use VLSs to learn their vocabulary (Gu and Johnson, 1996; Gu, 2003a). Students who use VLSs seem to be more successful in learning vocabulary as compared to the least users of these strategies. Research (Ahmed, 1989; Sanaoui, 1995) indicates that successful learners tended to utilise a variety of strategies, structure their vocabulary learning, audit and practise target words, and stay mindful of the semantic connections amongst new and already learnt words. The successful learners tended to be aware of their learning aims, learning challenges and finding a way to direct it, whereas unsuccessful learners may not have this mindfulness or, control and lack the ability to use self-initiatives and selective-attention.

1.3 Aims of the study

This empirical study is designed to explore the VLSs employed by university students in a Pakistani ESL context and to examine the impact of adopted VLSs

on their course-related and general vocabulary gain. After decades of research on VLSs in ESL/EFL context noted earlier in this chapter, research has to date been conducted on various aspects of VLSs which are mostly related to curricular vocabulary learning (e.g., meta-cognitive, dictionary strategies, guessing strategies, note-keeping strategies, social strategies, activation strategies and memory strategies). However, with the passage of time, technology, media and social media have been involved in teaching and learning the English language and vocabulary which may need to be researched with the collaboration of VLSs. To address this need, some empirical research on some individual extra-curricular VLSs has been conducted in foreign and second language learning (Maley, 1987; Strevens, 1987; Milton and Meara, 1995; Grab and Stoller 1997; Schmitt, 1997; Schmitt, 2000; Harris and Snow, 2004; Alsaif and Milton, 2012). However, there is not any empirical research conducted on curricular and extra-curricular VLSs in overall ESL and Pakistani ESL context. This study is therefore designed to explore VLSs and their effects on vocabulary gain in a Pakistani tertiary context to partially fill such a gap in the literature. The findings of this study are expected to offer a better understanding of vocabulary learning strategies used by successful learners. As such, it is hoped that this study will contribute theoretical, methodological and pedagogical implications to enhancing second language learners' vocabulary learning and assessment of vocabulary.

The current study focuses on two Research Questions:

RQ1: What are the curricular and extra-curricular VLSs adopted by Pakistani tertiary students to learn English vocabulary?

RQ2: What is the impact of the curricular and extra-curricular VLSs on vocabulary gain in this context?

The previous research in the related field reported an extensive list of VLSs (i.e., meta-cognitive strategies, guessing strategies, dictionary strategies, note-taking strategies, memory strategies, encoding strategies, activation strategies, learning vocabulary through the exposures of English media, English press and publications and having interaction with native speakers) to learn course-related and general vocabulary (Ahmed, 1989; Milton and Meara, 1995; Schmitt, 1997; Fan, 2003; Alsaif and Milton, 2012; Zhang and Lu, 2015). It has also reported that ESL learners use a variety of curricular and extra-curricular VLSs to learn course-related and general vocabulary. Some of the strategies listed above are briefly explained below (see more details in Chapter 2, Section 2.3).

"Meta-cognition consists of two features, understanding or appraisal of one's own thinking, and management of one's own thinking and learning endeavours" (Chamot and O'Malley, 1994, p.272). Schmitt (2000) categorises self-initiatives and selective-attention as meta-cognitive strategies which incorporate a mindful overview of the learning process and taking initiatives about planning, monitoring and evaluating the best ways to learn vocabulary. It involves L2 learners' self-initiatives and selective-attention to expand access to the input of vocabulary, determining the most appropriate means to learn vocabulary and

assessing themselves to measure improvement (Gu and Johnson, 1996). It also includes learners' initiatives towards the selection of words to learn and to skip.

Schmitt (1997) defines guessing strategies as "if learners do not know a word, they must discover its meaning by guessing from their structural knowledge of the language, guessing from an L1 cognate, guessing from context, using reference materials, or asking someone else" (p.210). Learners use guessing strategies, e.g., using immediate and wider contexts and linguistic clues to guess the meaning of unknown words (Gu and Johnson, 1996). Dictionary strategies are defined as discovery strategies (Schmitt, 1997) to discover the meaning of a new word. Learners use a variety of strategies to discover meaning and definition of the new word from monolingual and bilingual dictionaries. Learners also used note-taking strategies which can be defined as the practice of writing down and recording key points of information about focused vocabulary items for learning purposes. Learners prepare notes on their note-books, in the margin of their text-books and word-processed note-keeping. Learners may record the target words, along with their meanings, synonyms, antonyms, definitions, grammatical usage and write them down in example sentences. Memory strategies "involve relating the word to be retained with some previously learned knowledge, using some form of imagery, or grouping" (Schmitt, 1997, p. 211). Learners use memory strategies, e.g., rehearsal and repetition of word lists, oral and visual repetition, association and elaboration and using imagery (Gu and Johnson, 1996). Memory strategies encoding may involve a variety of micro-strategies, e.g., visual encoding, auditory encoding, word-structure, semantic encoding and

contextual encoding to memorise vocabulary (Gu, 2005). To remember and stimulate learnt vocabulary, learners use deliberate activation strategies, e.g., using learnt words in oral and written communication, and academic speaking and communicative tasks (Gu and Johnson, 1996). Learners also use extra-curricular VLSs to learn vocabulary and improve their English. The extra-curricular VLSs may include reading English newspaper and magazines (Grabe and Stoller, 1997; Schmitt, 1997), reading English literature, watching English TV programmes, watching and listening to English news on TV, watching English movies with sub-titles, listening to English music (Maley, 1987; Milton, 2008), listening to matches commentary (Strevens,1987) and learning vocabulary through social interaction where mode of communication is English (Milton and Meara, 1995).

The previous research implicates that learners use a variety of VLSs to learn their vocabulary (Gu and Johnson, 1996, Schmitt, 1997; Gu, 2003a; 2005; 2010). Similarly, Abraham and Vann (1987), Medani (1988), and Gu (1994; 2003b; 2005; 2010) explore language and VLSs adopted by the learners and report the significant difference of adopted VLSs between the successful and unsuccessful learners. The related studies also found the verified significant differences of adopted VLSs' patterns between successful and unsuccessful learners (Ahmad, 1989; Moir and Nation, 2002). These studies also reported a positive correlation between VLSs and vocabulary gain (Gu and Johnson, 1996; Kojic-Sabo and Lightbown, 1999; Fan, 2003). Researchers agree on the same point that it is not the VLSs which are good or bad but it's the appropriate use of these strategies

which makes these strategies effective or ineffective. Research (Gu and Johnson, 1996, Schmitt, 1997; Gu, 2003; Gu, 2005; Gu, 2010) also highlights the significance of meta-cognitive strategies and their role in the effective way of using vocabulary learning strategies in overall successful learning of vocabulary.

1.4 Organisation of the dissertation

This subsection provides an overview of the thesis. This dissertation is composed of six chapters. Chapter 1 is the *Introduction*, in which the background of the study and aims of the study is provided. This introductory chapter 1 has also provided the structure of the thesis with the overview of each chapter.

Chapter 2: Literature Review starts with a review of vocabulary learning in the ESL research, highlighting the significance of vocabulary in learning an L2. The chapter then reviews the challenges involved in vocabulary learning as discussed in the literature. The chapter provides an overview of the definition of vocabulary, aspects of vocabulary knowledge, and constructs related to measuring the vocabulary knowledge. After that, the chapter provides an overview of the taxonomies and classifications of VLSs, the definitions of VLSs and the benefits of using VLSs on vocabulary gain. For each VLSs, relevant studies in the literature concerning the impact of VLSs are also reviewed. The chapter then describes the adopted patterns of VLSs and their implications on vocabulary learning found in the previous studies. The chapter identifies some research gaps in the literature and proceeds with the two Research Questions. The Chapter ends with the reviews on the measuring of vocabulary knowledge.

Chapter 3: Research Procedure and Methodology portrays in detail the research methods of the present study. The chapter firstly describes the research design and approaches used in this study. The chapter then describes the quantitative and qualitative research methods employed to explore VLSs and their impact on vocabulary gain, detailing the phases of the study, participants, development of the research instruments, data collection procedures and methods of data analysis.

Chapter 4: Results of VLS Questionnaire and Vocabulary Tests presents the quantitative findings of each Research Question. The chapter first presents the results of the exploratory factor analysis (EFA) of the VLS questionnaire to categorise the VLSs. The chapter then presents and discusses the findings of VLS questionnaire regarding Research Questions 1. It then presents the results of the Productive Vocabulary Levels Test (PVLT) and the productive course-vocabulary test (PCVT). The chapter finally presents the multiple regression analysis to address Research Question 2.

Chapter 5: Results of Diary Reports, Interviews and Discussion aims to offer richer insight into the findings provided in Chapter 4. The quantitative findings of the structured diary reports and the thematic findings of the semi-structured interview responses are discussed with the quantitative findings of the VLS questionnaire and vocabulary tests to elaborate the Research Questions. This chapter begins with the results of the structured diary reports of vocabulary learning explaining the adopted patterns of VLSs by the successful (high-achieving) and least successful (low-achieving) learners. The chapter,

subsequently, presents the qualitative findings of the interviews and further compares the qualitative findings with quantitative findings of VLS questionnaire and structured diary reports to elaborate the adopted patterns of VLSs of the successful (high-achieving) and least successful (low-achieving) learners. Salient findings from different data sources about the two Research Questions of this study are summarised, synthesised and discussed.

Chapter 6: Conclusions presents the summary of the study and conclusion summarising and discussing the findings. Then following some descriptions of the limitation of this study, this chapter concludes with the contributions and implications of this study.

Chapter 2: Literature Review

2.1 Introduction

Having introduced the main aims of the present thesis in Chapter 1, Chapter 2 provides a review of the literature on vocabulary learning strategies (VLSs), with a particular focus on VLSs and their impact on vocabulary learning in English as a Second Language (ESL) contexts.

This chapter is organised into nine sections. Following this introduction (Section, 2.1), Section 2.2 reviews the nature of vocabulary, how vocabulary is learnt, and aspects of word knowledge. Section 2.3 presents the relevant literature to review the significance of vocabulary learning in the ESL context.

Section 2.4 reviews each curricular and extra-curricular VLSs followed by Section 2.5 which evaluates the research into VLSs focusing the adopted VLSs by learners and the impact of VLSs on vocabulary gain in the ESL contexts. Section 2.6 then introduces vocabulary learning and VLSs in the Pakistani tertiary context where the present study was conducted.

After some literature gaps are presented in Section 2.7, the chapter proceeds towards the research questions of the study (Section 2.8). This chapter ends with the reviews of measuring vocabulary knowledge in ESL context.

2.2 Vocabulary

This study explores the role of vocabulary learning strategies (VLSs) and their impact on lexical gain. Before reviewing VLSs and their impact on the progression of vocabulary knowledge; it is worth exploring briefly what is vocabulary and

what it means to know a word. This section reviews the nature of vocabulary and key concepts about knowing a word.

2.2.1 The nature of vocabulary

It is vital to establish criteria to define a word due to its effect on *learning burden* that is some efforts are required to learn it (Nation, 1990). It is also necessary to know what is meant by a word to estimate word knowledge (Milton, 2009). Thornbury (2002) suggests that the choice concerning what considers a word may appear to be somewhat academic. There are essential implications regarding teaching and learning vocabulary. The words can bunch together to shape units that act as though they were single words.

The several boundaries are set in term of what a word is. Carter (1998) notes the (often perceived) definition of the word, "A word is any sequence of letters bounded on either side by a space or punctuation mark" (p.4). This definition of a word may be used to classify words in written texts. However, it does not fit in spoken texts. For example, if '*bring, long, obviously, good'* are separate words then what about the phrases such as '*once in a blue moon'* and '*looking for'*. Such kinds of phrases can function as a meaningful unit with a fixed or semi-fixed form. Due to these issues, Carter (1998) rejects the above orthographic definition of a word and elaborates that this definition "is not sensitive to distinctions of meaning or grammatical function and it is not complete" (p.5). According to Richards and Renandya (2007), the concept of a word has been broadened to lexical phrases and routines. Thornbury suggested (2002) that

"words can group together to form units that behave as if they were single words" (p.12).

There are few terms which are often used by experts to define a word, i.e., *tokens*, *types, lemmas* and *word families* (Nation, 2001; Thornbury, 2002; Milton, 2009). Counting every word form in a text is defined as tokens. If the same word form appears more than once, then each existence of it is counted. For example, the sentence *'It is not easy to say it correctly'* includes eight *tokens*. *Types* are counted the same way as in *tokens*. However, if the same words occur, they are counted only for once. For the same example sentence above, there are seven different types as *it* appeared twice. *Types* should be referred if the aim is to measure the vocabulary knowledge of learners, especially in writing. "This has important implications for testing. In testing, it simplifies the process of choosing the words to include in a test" (Milton, 2009, p.9).

Lemmas require a headword and some of its inflected and reduced forms. For example, '*write', 'wrote', 'written', 'writing'* are forms of the same word and '*write'* is the lemma. A *lemma* consists of a headword which can be useful in the corpus as it reduces the number of units. However, it is challenging to choose what should be comprised of a word family and what should not (Nation 2001).

This study follows the lemmatised definition of the word as it focuses the productive knowledge of vocabulary. Lemmatised forms of words are used to assess the productive knowledge of vocabulary (Nation 2001). The *word families* entail of a headword, its inflected forms, and its closely related derived forms.

Two types of vocabulary tests 1) The Productive Vocabulary Levels Test (Nation and Laufer, 1995;1999) and 2) productive course vocabulary test (Read, 2000; Nation, 2001) are used in this study (see Section 3.3.2.1), and both of these tests followed the lemmatised definition.

2.2.2 Knowing a word

Lexical entry is defined as information about a word that is stored in the mental lexicon and accessed when producing or recognising a word. It includes information that links the words with others in a network (Field, 2004; Aitchison, 2008). Meara (1997) stresses that knowing a word is much more than knowing its form. ESL learners have to develop a whole set of associations between words like those of an L1 user. L2 learners need to acquire oral and written forms of the word, homonyms/homophones with the same form, word class, inflections, syntactic properties (e.g. the pattern that follows a verb: PUT + object + position), range of senses (e.g., right), senses contrasted with those of other words (pie vs cake), collocations (heavy + smoker), co-occurrence (drive + car take + bath), sense relations, e.g., synonyms / antonyms / inclusion within a lexical set (e.g. flowers, tools).

There are different terminologies used to classify word knowledge and types of vocabulary learning which are reviewed in the next section. For instance: lexical breadth, lexical depth and fluency, incidental and explicit learning of vocabulary, explicit and implicit vocabulary learning, and receptive and productive word knowledge.

2.2.3 Learning process of vocabulary

Weinstein, Goetz, and Alexander (1988) demonstrate '*a simple information processing model of the learner*' of the learning process as shown in Figure 2.1 below.

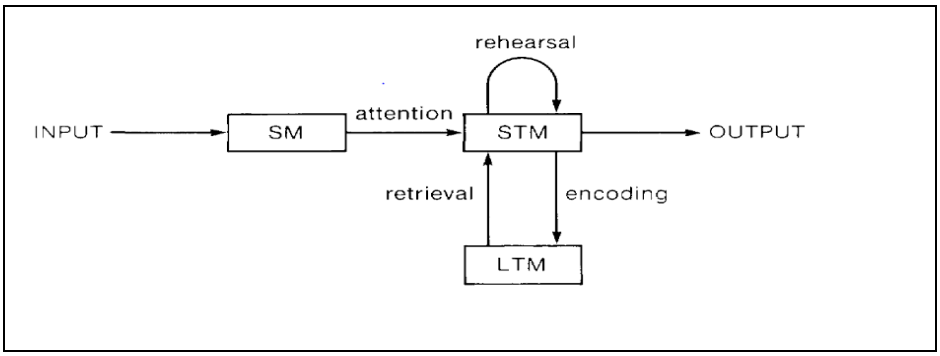


Figure 2.1 An information processing system (Weinstein, Goetz, and Alexander, 1988, P.15)

Three memory stores which are represented by boxes in this figure consist this model of the learning process. It includes *sensory memory* (SM), *short-term memory* (STM), and *long-term memory* (LTM). The four control procedures are represented by arrows which include *attention, rehearsal, encoding*, and *retrieval*.

Learning process starts with the attention when information from different resources (e.g., textbooks, newspapers, magazines, listening to music) enters the system through sensory memory. Learners need to pay attention to this information because it can fade quickly in the sensory store. The learner may transfer this information from sensory store to short-term memory by putting attention to this information. Weinstein, Goetz, and Alexander (1988) note that "learning strategies aimed at the process of attention can influence selective attention, and thus which kind of information reaches short-term memory" (p.

15). Learners cannot make the decision without finding out what the word means and how it functions. After having the first meeting with the new word, learners try to guess the meaning by using linguistic and sentence structure clues. After this, they consult teacher or dictionary to confirm the meaning, usage and then decide whether to keep this word in their notebook or not for further learning.

To continue the learning process, the learner should rehearse and memorise the information to process this from sensory memory into short-term memory otherwise it can fade away rapidly. “Learning strategies aimed at the process of rehearsal can influence how much rehearsal takes place, and thus, how long information can be held in short-term memory” (ibid, p.15). Then Information can be transferred from short-term memory to long-term memory store by applying encoding strategies. Though information stored in long-term memory is more likely to be permanent, the retrieval of the information can be hindered. Weinstein, Goetz, and Alexander (1988) note that “learning strategies aimed at the process of encoding can influence how fast information is encoded and how much is encoded” (ibid, p.15). The process of transferring knowledge from long-term memory to short-term memory is referred to retrieval. Learners retrieve this knowledge whenever they need.

This learning process may be linked with vocabulary learning strategies (VLSs). Learners may start the learning process by getting information from the outer word while using guessing in context, dictionary use and note-taking. This information is being stored in learners’ sensory memory. They may transfer this

initial knowledge (receptive) from sensory store to short-term memory by using memory rehearsal strategies. This knowledge may be transferred into long-term memory (productive) by using encoding strategies. Other than real-life situations, activation strategies may facilitate vocabulary learning by providing deliberate practice of retrieval.

2.2.4 Aspects of word knowledge

Milton (2013) emphasises that "there is no definitive list of what comprises word knowledge and even native speakers will not know every facet of every word in their lexicon" (p.59). There are many facets to know about each vocabulary item which involves many degrees of knowledge because vocabulary items are not isolated units of language and fit into many intertwining systems and levels (Nation, 1990; Elgort and Nation,2010). Milton (2013) notes that "potentially, there is a lot involved in knowing a word" (p.58). Usually, word knowledge is divided into receptive or passive knowledge (i.e., the lexical items that are known when heard or read) and productive or active knowledge (i.e., the words that can be called to mind and used in speech or writing) (Milton, 2009). Milton (2013) note that "perhaps the most important conclusion that emerges from the research is the importance of vocabulary knowledge in being able to understand and communicate in a foreign language" (p.71).

There are some other terms of learning vocabulary which are often used in ESL context, such as, incidental, explicit and implicit vocabulary learning. Milton and Donzelli (2013) point out that there is a confusion in the terminology of

incidental, explicit and implicit vocabulary learning. In language learning, the concept of implicit learning is unsatisfactorily distinguished from the concept of implicit learning in psychology (Rieder, 2003). There is a crucial distinction made between explicit and implicit learning in psychology. For example, implicit learning involves the absence of conscious operations in the learning procedure. The learner is not purposely testing a hypothesis or searching for a structure in the exposed language. In language learning, incidental learning may refer to learning in the sense that psychologists typically use it (Harris and Snow 2004). Incidental vocabulary learning may be defined as the learning of new words as a *by-product of a meaning-focused communicative activity*, such as *reading or listening*, and *interaction* which occurs through "multiple exposures to a word in different contexts" (Huckin and Coady 1999, p. 185). Milton and Donzelli (2013) note that the learner may make a cognizant note of new vocabulary, test out new vocabulary in a communicative task which may make the attention on vocabulary learning genuinely explicit. However, any learning would at present be called coincidental because the concentration of the action was thought to be communication instead of vocabulary learning. This kind of learning may be called *informal* to differentiate it from fairly *incidental learning* where the learner does not tend to put a thoughtful, conscious consideration to the vocabulary learning (Milton, 2008).

Knowing the form and meaning of the word is considered as the receptive knowledge of the word, and knowing its grammar function and usage is linked with productive knowledge of vocabulary (Nation, 2001; Thornbury, 2002). The

receptive knowledge of the word is obtained through language input from listening, reading and then comprehending it. In contrast, the productive knowledge of the word is linked with the production of language forms by talking and writing to pass on messages to others. The productive knowledge of the vocabulary also involves the attempt to express the meaning through speaking and writing and retrieving the appropriate spoken and written word form. Generally, knowing a word means having the knowledge of the *form* and *meaning* at receptive level (Nation, 2001). However, from the point of view of productive knowledge and use, knowing the word involves three aspects. 1) being able to produce the word to express the meaning 2) being able to produce the word in context to express the meaning, and 3) knowing the grammatical functions (Nation, 2001; Thornbury, 2002). The aim of the study is to explore the adopted VLSs and their impact on the gains of productive knowledge of vocabulary. Therefore, those mentioned above three key aspects of productive knowledge of vocabulary are used in this study.

2.3 Vocabulary learning in the second language

Schmitt (2008) proposes that "one thing that students, teachers, materials writers, and researchers can all agree upon is that learning vocabulary is an essential part of mastering a second language" (p. 329). Milton (2009) emphasises that "words are the building blocks of language and without them, there is no language" (p.3). Nation (2001) suggests that vocabulary learning is as important as other language skills to learn the language. Vocabulary learning is one of the necessary sub-goals of a range of important goals to learn the

language. Therefore, it is recommended (Nation, 2001, p.4) that "teachers and learners should give careful consideration to how vocabulary is learned".

Moir and Nation (2002) note that the choices of vocabulary learning relate to the learners' language learning goals, e.g., learning English for academic purposes, for social uses, and for specific aims such as reading newspapers or watching TV. L2 learners learn vocabulary from different sources. Learners receive vocabulary input and gain vocabulary knowledge during their English lessons in their classroom. Learners may be involved in the artificial communicative tasks (i.e., role play, dialogue, scenario-based learning). However, it seems that the language classroom can be a poor place for language interaction between learners in a natural way (Milton, 2006; Laufer, 2010; Milton et al., 2012). The classroom input is not the only source of vocabulary learning as L2 learners learn English from many varied sources (Milton, 2009). For example, learners may learn vocabulary from social interaction, English media and press outside the classroom. Milton (2006; 2009) suggests that vocabulary can be learnt by getting involved in the online social interaction, media and extensive reading of newspaper outside the classroom.

2.3.1 Challenges in vocabulary learning

Schmitt (2007) notes that English vocabulary learning can be challenging for ESL learners as the English language possibly comprises the highest number of words in any major language. For example, knowledge of the most *frequent 2,000-3,000 word families* in English provides the substance of the lexical resources

which is essential (Schonell et al.,1956; Adolphs and Schmitt, 2003) to participate in the basic everyday oral communication. On the other hand, “the vocabulary in the 2,000-3,000-frequency band provides additional material for spoken discourse, but additionally, knowledge of around 3,000 families is the threshold that should allow learners to begin to read authentic texts. Most research indicates that knowledge of the most frequent 5,000-word families should provide enough vocabulary to enable learners to read authentic texts” (Schmitt, 2007, p.746).

Another challenge which is faced by EFL learners to learn vocabulary is the long journey towards achieving different aspects of vocabulary knowledge (e.g., knowledge of form, meaning, grammatical function, collocation, and constraints on use). Schmitt (2007) specifies that the first step to learning vocabulary perhaps is to know the meaning of a word. However, ESL learners require much more in-depth knowledge of vocabulary to be able to use it in any required situation.

Nation (2001) emphasised that L2 learners need to know an enormous number of vocabulary including high-frequency, academic, technical and low-frequency words. Frequency-based studies show that some vocabulary items are much more useful than others (Hwang and Nation, 1995). The high-frequency words cover a large proportion of the words in oral and written texts and occur in all kinds of uses of the language. It is often suggested that these high-frequency words are so important in learning an L2 that considerable time should be spent to learn these words. It is recommended that learners should focus these high-

frequency words by putting attention in the form of direct as well as incidental learning by applying VLSs (Nation, 2001).

The other challenge in learning vocabulary is the way it is learnt incrementally; it prompts to the suggestion that words must be met and used variously to be genuinely learnt (Schmitt, 2007; Nation, 2015). Researchers such as McKeown et al. (1985), Nation (1990) and Nagy (1997) propose that some exposures are necessary to learn vocabulary. Even vocabulary learnt through a rich program of vocabulary instruction needs seven or more encounters for long-term learning (McKeown et al., 1985). Nation (1990) recommends that activation of old vocabulary may be as important as it is to learn new ones otherwise it will fade away from memory.

Schmitt (2007) proposes that vocabulary learning challenges can be minimised by ensuring appropriate vocabulary teaching and learning. For example, these challenges may be addressed by explicit and implicit learning of vocabulary. Vocabulary learning may be facilitated through independent vocabulary learning, i.e., vocabulary learning strategies. It is recommended that "one of the ways teachers can aid this process is by helping learners become aware of and practised in using a variety of vocabulary learning strategies. Research shows that many learners do use strategies for learning vocabulary" (Schmitt, 2007, p. 755). Schmitt (2007) further suggests that different vocabulary learning techniques should frequently be utilised simultaneously instead of being used individually. An appropriate application of VLSs implies *active management* (i.e., taking decisions on where to emphasise focus, how to focus the attention and

how often to give attention to the target vocabulary) of strategies which is recommended as an outstanding approach to successful learning of vocabulary (Gu and Johnson, 1996). Research (Ahmed, 1989; Sanaoui, 1995) indicates that successful learners take initiatives towards utilising a variety of strategies, structure their vocabulary learning, audit and practise target words, and stay mindful of the semantic connections amongst new and already learnt L2 words. That is, the successful learners may aware of their learning and find a way to direct it, whereas unsuccessful learners generally do not have this mindfulness and control in taking appropriate initiatives and selection to learn vocabulary.

This section reviewed the nature of vocabulary, aspects of vocabulary knowledge, the significance of vocabulary learning to master the language and challenges involved in L2 vocabulary learning. The next section will mainly review curricular and extra-curricular VLSs.

2.4 Curricular and extra-curricular Vocabulary learning strategies (VLSs)

This section is organised into six sub-sections. It reviews (a) the language learning strategies, (b) vocabulary learning strategies, (c) taxonomies of VLSs, (d) meta-cognitive strategies, (e) curricular VLSs and (f) extra-curricular VLSs regarding vocabulary learning in English as a second (ESL) and foreign language learning (EFL) contexts.

2.4.1 Language learning strategies (LLS)

VLSs are a part of LLS which learners adapt to learn the language (Nation, 2001). Gu (2012a) notes that definition of LLS is argued because LLS are considered as unclear definable concept due to their close resemblance to each other. It might be the main cause that there is a lack of interest in researching language learning strategies even today (ibid). This *'conceptual fuzziness'* should not be considered an issue to overthrow decades of research on Language learning strategies (Gao, 2007; Rose, 2012). The experts and researchers need to react beyond these issues as such sort of studies may guide to teaching and pedagogical implications (Gu, 2012a).

In the 1970's, ESL researchers had a considerable interest in discovering useful language learning strategies (Schmitt, 1997). Some of these studies were experimental and most of the work was done on identifying strategies used by good learners (Rubin, 1975; Naiman et al., 1978; Wong-Fillmore, 1979; O'Malley et al., 1985) whereas, some studies were of descriptive nature to explore and describe categories of learning strategies (O'Malley and Chamot, 1990; Oxford, 1990). Though these studies were directly dedicated to language learning strategies, these studies indirectly impacted on taxonomies of strategies related to vocabulary learning (Schmitt, 1997).

2.4.2 Vocabulary learning strategies (VLSs)

Vocabulary learning can be facilitated by VLSs, so it is significant for teachers and language learners to understand the definition and usefulness of VLSs to learn vocabulary (Nation, 2001). The next section will review the definition of VLSs.

2.4.2.1 Definition of vocabulary learning strategies

Vocabulary learning involves VLSs and other behaviours which learners adapt to learn their vocabulary (Nation, 2001). It may be difficult to arrive at a definition of what a vocabulary learning strategy is. VLSs can increase the efficiency of vocabulary learning and vocabulary use. Gu (2012b) defines VLSs as "conscious efforts" by learners to make their learning experience more "effective and "efficient" to learn vocabulary and to increase vocabulary size. This point is further outlined as "VLS are indispensable in describing and explaining the vocabulary development of a foreign language" (Ibid, p.4).

In other words, VLSs can be defined as an approach to facilitate vocabulary learning (Schmitt, 2000). Learning strategies can be used for various vocabulary learning purposes so any action or deliberate planning to learn vocabulary can be a VLS (Schmitt, 1997). According to Rubin (1987) and Schmitt (1997), VLSs are linked with the process by which the information is *obtained, stored, retrieved, and used* as reviewed in Section 2.2.3.

2.4.3 Taxonomies of vocabulary learning strategies

The research on vocabulary learning strategies, VLSs taxonomies and categorisations (Gu and Johnson, 1996; Schmitt, 1997; Nation, 2001; Zhang and

Li, 2011) is conducted both in breadth and in depth in the ESL and EFL contexts. However, the taxonomies and categorisation of VLSs are not always straightforward, and the coverage of different taxonomies has also been challenged. Some taxonomies of VLSs have been developed previously (Ahmad, 1989; Gu and Johnson, 1996; Schmitt, 1997). Vocabulary can be learnt through direct and indirect exposure to words in context (Schmitt, 2000). Different factors such as aims behind using VLSs and different contexts can affect the classification of strategies. It is quite challenging as learning strategies can easily fit into two or more groups, resulting "inadequate" classification (Schmitt, 1997).

Schmitt (1997) developed VLSs taxonomy organised around Oxford's (1990) language learning strategies taxonomy. They include social strategies, memory strategies, cognitive strategies and metacognitive strategies. Takac (2008) points out that Schmitt's (1997) taxonomy is inadequate for the study of VLSs due to the overlap of VLSs with each other. For example, some strategies could be classified into more than one group and it seems difficult to keep the distinction between cognitive and memory strategies because both of these strategies are used in recalling and retrieving by the language learners. An adequate grouping and classification are compulsory for conducting studies where the main aim is to correlate VLSs to vocabulary gain as overlapped variables cannot generate reliable findings.

Ahmad (1989) developed a taxonomy of VLSs by classifying them into two main categories 1) macro and 2) micro VLSs. Ahmad's (1989) taxonomy classifies VLSs into macro and micro VLSs. Macro VLSs can be defined as broad general

approaches in categorising vocabulary learning strategies. For example, curricular VLSs may be classified as macro VLSs which includes some micro VLSs (e.g., guessing strategies, dictionary strategies, note-taking strategies, memory strategies). Each micro VLSs can be subsumed under the category of macro VLSs.

Nation (2001) identifies that the meta-cognitive strategies are skipped in Schmitt's (1997) and Ahmad's (1989) taxonomies. Gu and Johnson's (1996) taxonomy was developed about the same time as Schmitt's (1997) taxonomy with the more clarified classification of VLSs. The list of VLSs was divided into meta-cognitive strategies, guessing strategies, dictionary strategies, note-taking strategies, memory strategies, and activation strategies. As will be further explained below, this taxonomy seems the most comprehensive one developed to date and suitable to the context of the present study. This study adopted Gu and Johnson's (1996) taxonomy to represent curricular VLSs. Though this taxonomy seems the most coherent and is generally used by the researchers, it does not include the extra-curricular strategies employed by the learners to learn their vocabulary and may need further scrutiny.

Definitions of individual VLSs will be presented in the following sections while considering it suitable to the context of the present study. Individual VLSs will be explained under three main sub-headings: (a) Meta-cognitive strategies, (b) Curricular VLSs and (c) Extra-curricular VLSs.

2.4.4 Meta-cognitive strategies: selective-attention and self-initiative

The meta-cognitive strategies can be defined as decisions such as "where to focus attention, how to focus the attention, and how often to give attention to the item" taken by learners in relation to learning their vocabulary (Nation, 2001, p.218). Vocabulary learning process is a lively procedure which involves attention from guessing, dictionary consultation and note-taking. It also involves the rehearsal, encoding, and activation for memorisation and retrieval purposes. It seems challenging to classify selective-attention and self-initiative as curricular or extra-curricular VLSs as it involves linking of '*metacognitive choice'* and '*cognitive implementation'* of a whole range of VLSs adopted by L2 learners to use (Gu, 2005). Both of these meta-cognitive strategies may directly or indirectly be linked with the both curricular and extra-curricular VLSs.

Schmitt (2000) classifies selective-attention and self-initiative as meta-cognitive strategies which encompass a cognisant overview of the learning process and taking initiatives about planning, monitoring and evaluating the best ways to learn vocabulary. It involves L2 learners' selective-attention and self-initiative to improve access to the input of vocabulary, deciding the most suitable methods to learn vocabulary and assessing themselves to measure improvement. It also includes their initiatives towards the selection of words to learn and to skip.

As noted earlier (Section 2.3), ESL learners tend to learn various levels and sorts of vocabulary, e.g., high- and low-frequency, academic, technical, and of general vocabulary for communication. Nation (2001) suggests that "learners should have a clear strategy for deciding what vocabulary to focus on and where to find

this vocabulary" (p. 219). It is recommended (ibid) that ESL learners should be aware of their vocabulary learning goals and they should be trained in choosing appropriate vocabulary to fulfil these aims. These initiatives may play a distinctive role in the successful learning of vocabulary. As reviewed earlier (Section 2.3), different aspects of word knowledge are involved in knowing a word. As well as learners are suggested to be aware of these aspects of word knowledge, they should also be aware of which aspects they need to focus. Learners' main concern while reading may be to know the meaning of a word to comprehend the idea of reading the abstract. In contrast, in writing, they are likely to pay additional attention to other aspects, such as spelling, usage, and grammatical knowledge.

Nation (2001) notes that "successful strategy users need a strategy for controlling their strategy use. This involves choosing the most appropriate strategy for a range of known options and deciding how to pursue the strategy and when to switch to another strategy" (p.219). For example, consulting dictionary followed by note-taking strategies, note-taking strategies followed by memory strategies, and memory strategies followed by activation strategies. As discussed in Section 2.2.1, it is said that five to sixteen exposures are necessary to learn a word (Nation, 1990). "This means that the conscious decision to preserve may be one of the most important strategies of all" (Schmitt, 1997, p.217). Selective-attention and self-initiatives towards focusing specific vocabulary for planning and repetition lead to a successful learning of words.

This process may be linked to the individual informal schedule by learners or an organised schedule of vocabulary learning by the educational institutes.

Gu (2012b) elaborates that "successful vocabulary learners are active learners who take their own initiative and are selective" (p.5). Gu and Johnson (1996) note that meta-cognitive strategies have an impact on successful learning of vocabulary. The findings of their study indicate that successful learners use meta-cognitive strategies more dynamically and appropriately as compare to the least successful learners. The findings of this study were in line with Sanaoui's study (1995) which also identifies that successful learners employ the systematic approach of using meta-cognitive strategies, whereas unsuccessful learners seem to employ microscopic meta-cognitive strategies and often depend on what teachers ask them to do. Sanaoui's study (1995) indicates that systematic *'structured approach'* (e.g., awareness of learners towards meta-cognitive strategies) show better learning outcomes than the *'unstructured approach'* to VLSs. Tseng, Dornyei and Schmitt (2006) clarify that the learners' characteristic of self-regulatory capacity, i.e., commitment and meta-cognitive strategies to learn vocabulary play a major role in vocabulary learning outcome.

This section reviewed the meta-cognitive strategies; the next section will focus curricular vocabulary learning strategies.

2.4.5 Curricular vocabulary learning strategies

This section describes curricular VLSs, e.g., guessing strategies, dictionary strategies, note-taking strategies, rehearsal strategies, encoding strategies, and

activation strategies. These strategies are linked with academic and curriculum learning of vocabulary and have been explored (Gu and Johnson, 1996; Schmitt, 1997; Nation, 2001) in the academic ESL/EFL context. In Pakistani academic context, the above noted curricular VLS are used by ESL learners to learn curriculum vocabulary (Kazi and Iqbal, 2011; Fatima and Pathan, 2016). As noted in Chapter 2, Section 2.4.3, the VLSs are related to each other; the classification and the definition of VLSs may overlap due to this fact.

2.4.5.1 Vocabulary guessing strategies

"Vocabulary guessing strategies (VGS) refer to the plans and procedures people use to guess the contextual meaning of words, during reading or listening, for the main purpose of comprehension" (Gu, 2015, p.1). Guessing is required when an unknown word is experienced while reading or listening in an L2. Even guessing strategies are used by the experienced readers and listeners in their mother tongue. Since many words are homonyms (e.g., the words that are both spelled and pronounced the same, but have different meanings) or homographs (e.g., each of two or more words spelled the same but not necessarily pronounced the same and having different meanings and origins), some portion of the understanding procedure relies on upon gathering the right and fitting meaning in context (Gu, 2015).

Studies in the L2 provide the evidence about the impact of guessing strategies on the incidental acquisition of vocabulary (Nagy, Anderson, and Herman, 1987). While the primary motivation behind vocabulary guessing is comprehending the

meaning, the guessing process can demonstrate the learning to word-form which may enhance the receptive knowledge. This process can provide the incidental learning and also increase the depth of knowledge when learners use known words in the target sentence to guess the meaning of an unknown word (Hu and Nassaji, 2014).

Nation (2015) suggests that if an unknown vocabulary item occurs in the text during reading or having an oral communication, ESL learners may try to discover the meaning of the unknown word. There are numerous ways, such as guessing from context, guessing with the help of other vocabulary items used before or after this unknown word and using knowledge of word structure, prefix and suffix or simply asking others for meaning or using dictionaries to determine the meaning. In written text, learners can guess the meaning from its surrounding words, whereas in oral communication, guessing may be achieved by clues from gestures, body language and intonation (Schmitt, 1997). To guess the meaning from the context, learners may use linguistic cues and background knowledge and may look at the wider and immediate context. Learners may also check the meaning in the dictionary to justify the guess by applying a variety of clues and readjust the guess if needed (Nation, 2001) which links guessing strategies with dictionary strategies. This linking is important for *attention* purposes which are required to move the sensory memory store to the short-term memory as reviewed in Section 2.2.3. Due to this fact, vocabulary guessing strategies may enable learning and increasing knowledge of a new unknown vocabulary item and can be a leading source of discovering and acquiring new vocabulary

(Schmitt, 1997). Guessing strategies have been promoted in language and vocabulary learning classrooms since the past decades due to its suitability with communicative teaching and learning approaches (Schmitt, 1997).

Guessing the meaning of an unknown vocabulary item from its context has been confirmed as a useful way of learning and gaining vocabulary knowledge (Saragi, Nation and Meister, 1978; Ferris, 1988; Pitt, White and Krashen, 1989; Fan, 2003). Fan (2003) carried out a large-scale study in Hong Kong focusing on EFL learners in Cantonese background on identifying the vocabulary size of the students, the impact and usefulness of VLSs for learning vocabulary. Vocabulary guessing strategies turned out the most often used and useful strategy in learning vocabulary among the 56 VLSs. The successful learners who were the most proficient in vocabulary learning used vocabulary guessing strategies significantly to learn English vocabulary.

Nation (2001) emphasises that using guessing strategies to learn vocabulary is one of the most significant sources of vocabulary input. Guessing strategies involve learning from extensive reading, communication with others, listening to stories, films, television or the radio. Learning vocabulary by guessing its meaning from the context is an incidental learning of vocabulary from reading and listening to the authentic language use in which the ESL learners focus mainly on the message of the text. Guessing strategies may also involve intensive learning of vocabulary if the ESL learners use guessing strategies for deliberate and direct learning of academic or general vocabulary.

While some studies (Saragi, Nation and Meister, 1978; Ferris, 1988; Pitt, White and Krashen, 1989) identify that guessing strategies are effective in learning vocabulary, some studies (Bensoussan and Laufer, 1984; Schatz and Baldwin, 1986; Kelly, 1990; Haynes, 1993) report that learners are often unable to guess the meaning of new unknown vocabulary items from the text. However, there are a few limitations and prerequisites of guessing strategies which cannot be ignored (Clarke and Nation, 1980; Schmitt 1997; Huckin and Coady (1999). Guessing by the analysis of grammatical structures and parts of a word may lead to a wrong and inaccurate interpretation of the unknown word. For example, beginner level learners may lack guessing skills due to their limited knowledge of vocabulary. In contrast, intermediate to advanced level learners develop guessing skills which are required to get the benefits from the guessing strategies. Gu (2003a) argues that to learn vocabulary through guessing strategies effectively, learners should be of the level of advanced language proficiency skills. Advance level of proficiency may support learners to make sense of new unknown vocabulary items from its context. These guessing skills may facilitate learners to interpret the orthographical form of new unknown vocabulary items correctly. Similarly, it is necessary that L2 learners have a knowledge of a large proportion of the words in the text to be able to use the clues for guessing the new unknown words. For example, L2 learners should be familiar with at least one word in every two lines or 95% of the running words, which means that there is one unknown word in every twenty running words (Liu and Nation 1985).

ESL learners tend to have an adequate contextual knowledge of the related subject, practice and awareness of how to apply guessing strategies to get the full benefit from this strategy. ESL learners are also likely to be exposed to the relevant texts, enriched with the academic context, and have enough clues for guessing (Huckin, Haynes and Coady, 1993) in educational contexts. Gu (2003a) also points out that if learners use only guessing strategies in isolation to learn vocabulary, the learning process can be slow. Learning vocabulary by applying guessing strategies can be more effective and fast if these strategies are used with a combination of other strategies (Parry, 1991; 1993; 1997; Paribakht and Wesche, 1997; Zimmerman, 1997; Schmitt, 2000; Laufer and Hulstijn, 2001; Nation, 2001). For example, vocabulary learning involved in incidental learning through guessing strategies, attentional learning by looking up the meaning of the new word in a dictionary for comprehension (Laufer and Hill, 2000) and then recalling or revising what is already learnt (Joe, 1998).

2.4.5.2 Dictionary Strategies

Dictionary strategies are defined as discovery strategies (Schmitt, 1997) to discover the meaning of a new word. Learners use a variety of strategies to discover meaning and definition of the new word from monolingual and bilingual dictionaries. The use of dictionary strategies for comprehension of unknown words and for the extension of vocabulary knowledge have been reported (Scholfield, 1982; Neubach and Cohen, 1988; Gu and Johnson, 1996) in ESL contexts. Dictionary strategies may include the following self-initiatives and selective attention:

-Confirming the guessed meaning and looking up meaning in the dictionary of an unknown vocabulary item (comprehension)

-Looking for the definition, usage, grammar, synonyms, antonyms and pronunciation in the dictionary of an unknown vocabulary item (extension)

Nation (2001, p.252) notes that "there is now considerable evidence that when learners' attention is drawn towards unfamiliar words, and there are clear indications of meaning, vocabulary learning is much greater than when learners read without deliberately focusing on new vocabulary". As reviewed earlier (Section 2.4.4), selective-attention and self-initiative are linked with other VLSs including the dictionary strategies. Nation (2001), highlights that learners need to learn the skills in term of their selective-attention and self-initiatives regarding if the word is worth looking up by assessing its relevance to the task and overall usefulness. Learners need to develop the skills to find the dictionary entries such as the alphabetic order of letters, knowledge of dictionary strategies and knowledge of alternative places to search such an appendix. Learners are suggested to develop the skills to choose the right sub-entry once the correct entry has been found. They should also have skills such as relating the meaning found in dictionaries to the target context and evaluate if it fits (ibid).

Dictionaries are used for a broad range of purposes in ESL contexts. ESL learners use dictionaries for comprehension (e.g., decoding for listening and reading) as well as production (e.g., encoding for speaking and writing) (Scholfield, 1982, 1991). Nation (2001) elaborates that learners use dictionaries to decode input

language, such as looking up unknown words encountered during listening and reading, checking the meaning of partially known words, and confirming guessed the meaning of unknown words. Dictionaries are also used to encode output language. For example, learners may look up unknown words that are required to speak, write or translate; they may look up the spelling, pronunciation, meaning, grammar, constraints on use, collocations, inflections and derived types of mostly known words needed to speak, and write; they may also check that a word exists and find a different word to use instead of a known one and correct an error (ibid). ESL learners, therefore, use dictionaries to learn unknown vocabulary and to enrich the knowledge of already known words. Using dictionary strategies for encoding and productive purposes involve discovering the forms of words to express messages. However, applying dictionary strategies are discovery strategies which are linked with the *attention* during the learning process (see Section 2.2.3). Using dictionary may facilitate receptive learning and may lead the learning process towards the productive learning if followed by the usage of memory, encoding and activation strategies. Learners need to have the skills of finding the required word form, meaning, spelling, pronunciation, synonyms, antonyms, usage, grammar, and collocation of the target vocabulary.

Bensoussan, Sim and Weiss (1984) conducted four large-scale studies on advanced learners exploring the influence of the use of mono- and bilingual-dictionaries on success in L2 reading tests. They found out no correlation between dictionary strategies and the level of comprehension. However, they reported that apparently use of dictionaries might not affect the comprehension

of the test, but it might affect positively on learning individual vocabulary items. Using comprehension and extended dictionary strategies to learn vocabulary may enhance and grow vocabulary gain (Luppescu and Day, 1993; Knight, 1994). Dictionary strategies used during reading comprehensions without guessing the meaning seem less efficient in vocabulary gain as it may hinder the attention of learning process. Nation (2001) identifies that putting more attention in understanding the meaning of an unknown word with the help of context and then confirm the guesses in a dictionary can raise the leaning attention resulting in the acquisition of vocabulary receptively.

Studies (Stahl and Fairbanks,1986; Summers, 1988) indicate that guessing strategies combined with dictionary strategies are more effective than applying guessing only or dictionary only strategies to learn vocabulary. Based on Hulstijn's (1993) study on high-proficiency and low-proficiency learners, a positive relationship was reported between word relevance, reading goals and dictionary use. The study revealed that learners looked up words in the dictionary whose meaning could not be easily guessed from their contexts. Hulstijn (1993) also reported that high-proficiency learners note down new guessed words for later learning. They prefer to confirm their guesses by consulting dictionaries.

Later Knight (1994) also confirms the effectiveness of dictionary usage and vocabulary learning. He conducted an experiment where two groups of students were asked to read a text and then report in writing about what they comprehend in their own words. Only one group of students was provided with a

dictionary access to check unknown words. Vocabulary tests were conducted immediately and after two weeks. Results show that the learners who used dictionaries for comprehension of meaning and extension of word knowledge achieved higher scores as compared to the group of learners who did not use dictionaries. They also discovered that the learners who used a dictionary as well as guessing were not only gained higher scores in immediate vocabulary tests but also after two weeks' vocabulary tests. Later Luppesu and Day (1993) confirm the advantages of the dictionary and guessing strategies used in combination in L2 learning. However, they also indicate the issue that guessing unknown words and then using a dictionary to inveterate the guessed meaning or detailed learning may be very time-consuming.

2.4.5.3 Note-taking strategies

Note-taking is defined as the practice of noting down the pieces of information in a systematic way. Learners keep the valuable information in their notebooks by applying different note-keeping strategies.

Similar to the first meeting and getting information from dictionary about a new vocabulary item, learners also put *attention* on the new item by noting it down for later learning. Note-taking can process the learning of vocabulary by saving the information in the sensory memory store as mentioned earlier in Section 2.2.3. After achieving the initial target of receptive knowledge and memorising new vocabulary lists along with meanings, L2 learners are recommended to enrich their learning by adding other aspects of word knowledge in the lists. For

example, Schmitt and Schmitt (1995) noted that “preparing semantic maps to visualise the associative network of relationship which exists between new words and those they already know” (p. 139). They (ibid) also propose that learners should go through their notebooks regularly to recycle and activate their vocabulary knowledge. In this way, they can ensure a regular learning of new words, and activation of their enriched knowledge of already learnt words.

ESL learners prepare notes by adopting note-taking strategies, such as vocabulary notebooks, flashcards and writing in the margin of textbooks (Gu, 2005). McCarthy (1990) emphasises that “keeping some sort of written record of new vocabulary is quite an important part of language learning for many students” (p.127). It may enable vocabulary learning in two ways; i.e., writing a word can enable memorising of a new item, and the written record can be used for the further learning and revision (ibid). It is noted that the patterns of the note-taking strategies may play a significant role in its effectiveness toward vocabulary learning (Ahmad, 1989). For instance, more meaning-oriented (note-keeping of word-meaning) and usage-oriented (note-keeping of synonyms, antonyms, usage, the grammar of the target word) note-keeping seem to be more effective in the process of vocabulary learning than just noting down the meaning (Gu and Johnson, 1996).

Note-taking strategies have different dimensions which ESL learners adapt to learn vocabulary. ESL learners tend to make a note in the margin of their textbooks during their lessons, make vocabulary lists, and write meaning, grammatical function, usage, synonyms, antonyms, example sentences, first

language (L1) translation to learn vocabulary (Ahmad, 1989; Schmitt, 1997; McCrostie, 2007).

Note-taking strategies are tended to be linked with the other VLSs. To prepare notebooks, learners use dictionaries for meaning and definition. It also involves meta-cognitive strategies regarding making decisions about the selection of specific vocabulary based on their needs for note-taking to learn vocabulary.

A number of studies (Allen, 1983; Gairns and Redman, 1986; McCarthy, 1990; Schmitt and Schmitt, 1995; Mc Crostie, 2007) report the significantly different patterns of note-taking strategies adopted by the high-achiever and low-achiever learners, highlighting the benefits of note-taking strategies on vocabulary learning. These studies suggest useful patterns of note-taking strategies such as the formatting, grouping, enriching knowledge, recycling and expanding rehearsal about vocabulary learning.

Schmitt and Schmitt (1995) based on their reviews on the principles of language learning and language memory, identify the usefulness of note-taking strategies to learn vocabulary. They propose that organising materials can facilitate vocabulary learning. They note that L2 learners use a variety of ways to organise vocabulary in a notebook to ease learning and recommend that notebooks should be arranged in a loose binder or the form of cards so that its pages can be taken out with no trouble and move around easily for learning and rehearsal purposes. ESL learners may also use iPad, mobile, laptop and computer, and

online clouds to prepare notes and make them available as they are out and about.

At the initial stages, ESL learners are recommended to prepare simple word lists along with their meanings in L1 and L2. These lists may be grouped and organised according to the needs of learners to achieve the target of further learning. These lists are suggested significant to be practised and rehearsed for deeper processing (Gairns and Redman, 1986; McCarthy, 1990).

However, this process depends on learners' self-initiatives and selective-attention of micro-notetaking strategies to learn vocabulary. Their considerations regarding the selection of words, preparing lists, organising these lists semantically, adding in-depth details, regular revision, and activation may impact on the effectiveness of note-taking strategies in vocabulary learning. Learners may select vocabulary lists from their course books and also focus on the general vocabulary for note-keeping. The selection of words for note-keeping may also depend on the need of ESL learners.

2.4.5.4 Memory strategies (rehearsal)

Carney (2011) notes that "memory strategies refer to any of a broad set of techniques that are designed to help one remember. Such strategies range from every day, external aids (e.g., using a planner) to internal memory strategies (e.g., mnemonic devices) that facilitate storage and retrieval from long-term memory" (P.937). Memory strategies rehearsal (focused in this section), memory strategies encoding and activation strategies (will be reviewed

in the next and the following section) play a significant role in the learning process, such as transferring information from sensory memory to the short-term memory, and long-term memory and retrieval as mentioned earlier in Section 2.2.3.

It is reported that the learners use various memory strategies to learn and remember the vocabulary items, e.g., using word lists for oral and visual repetition, repeating words orally and writing them several times until the word is memorised (Gu and Johnson, 1996). Thorndike (1908) studied the retention of the connections required in paired associations. The outcomes, demonstrating the speed of development of paired association, showed that the number of meanings learned in an hour and held sufficiently long fluctuated from 23 to 177 with a central tendency of the group at 80. Inconstancy in memory accomplishment demonstrated individual contrasts in the associative memory. In general, the findings of the study revealed that a good amount of words could be learnt (short-term) within a short period with a few repetitions if the aim of learning is a remembering of word pairs of L2-L1. Based on the study on intermediate level college students of Spanish, Lado, Baldwin and Lobo (1967) found out that only a few exposures of vocabulary can be sufficient for an average of 95% recognition and 65% recall. Similarly, Crothers and Suppes (1967) revealed that their participants retrieved 108 Russian-English words after seven repetitions and about 80% of word pairs were learnt after six repetitions.

Learning vocabulary by using rehearsal memory strategies can be very quick and efficient way of vocabulary learning (Thorndike, 1908; Webb, 1962; Crothers and

Suppes, 1967; Lado, Baldwin and Lobo, 1967). Though it depends on the difficulty of words, the list of 100 words or more can be studied and learnt by rehearsing it orally and visually at one time (Crothers and Suppes, 1967). For effective memorisation, new vocabulary items should be immediately rehearsed for learning purposes and should be recalled and repeated at longer intervals regularly (Seibert, 1927; Anderson and Jordan, 1928; Gu, 2005) as they may fade away from the short-term memory store rapidly (see Section 2.2.3). However, rehearsal and repetition should be followed by after the initial comprehension of the target word. Milton (2009) notes that "multiple repetitions may not help the initial learning of words, but may help them stay in the memory after learning" (p.227).

Monolingual or bilingual word lists are frequently used to learn vocabulary by ESL learners (Nation, 2001). Learners take a list of vocabulary items, generally with their first language translation or meaning in the L2 alongside, and try to memorise them. Milton (2009) emphasises that "far from being outmoded and ineffective, the learning of lists of translation pairs can be very effective in acquiring large amounts of vocabulary very quickly" (p.231). However, learners who use rote learning without the knowledge of the meaning and usage of the target word may save the word in short-term memory, and will not be able to retrieve if required.

Nation (1982) also affirms the effectiveness of using word lists to learn vocabulary. For example, at initial stages of the learning process, learners can use word lists just for initial exposures and later expand their learning by availing

more in-depth knowledge of already learnt words via word lists. Milton (2009) notes that “these [vocabulary] lists are easy to remember and have a remarkable power to stay in the memory” (p.229). Schmitt and Schmitt (1995) support this idea by suggesting that new words by using word lists can be learnt with the help of first language translation. These list with L1 translations may facilitate a quick receptive knowledge acquisition. Later, to move further from receptive to productive learning, encoding methods (e.g., semantic maps or using words into sentences) can be applied.

Fitzpatrick, Al-Qarni and Meara (2008) conducted a study on an English speaker, learning Arabic vocabulary which was involved in learning 300 vocabulary items in Arabic over twenty days at the rate of fifteen words a day. Immediate and delayed receptive and productive vocabulary tests of target vocabulary were taken after the learning periods. The results of immediate tests indicated the hundred percent learning of the target words. However, the results of the delayed tests showed that this learning was temporary for a short period. Fitzpatrick, Al-Qarni and Meara (2008) report that learning vocabulary from word lists is taken as old-fashioned and outdated technique. However, the findings of their study indicate using word lists can be a great source towards short-term vocabulary learning, although, the word lists should be regularly revised so that it may not fade away from the short-term memory store.

After reviewing the impact of rehearsal strategies on the learning process in this section, next section will focus the encoding strategies which are used to move

vocabulary knowledge from short-term memory store to long-term memory store.

2.4.5.5 Memory strategies encoding

Based on the learning theory (see Section 2.2.3), encoding strategies are defined as a process of learning which facilitates the converting of the known word into an idea and transforming known words from short-term memory into long-term memory. Gu and Johnson (1996) note that ESL learners use a variety of encoding strategies to memorise vocabulary effectively which includes association and imagery, visual encoding, auditory encoding and word structure, semantic encoding and contextual encoding.

Association and imagery involve specific actions of the learners which they take to facilitate their memorisation of the vocabulary. Such as, remembering a group of new words that share a similar spelling, acting out a word to remember it better, creating a mental image of the new word to help to remember, and associating one or more letters in a word with the word meaning to remember the new word.

Visual encoding is visualising the new words, associating the new word to a known English word that looks similar and remembering the spelling of a new word by breaking it into several visual parts to remember it to memorise and remember the known words.

Auditory encoding and word structure may associate with remembering words that sound and spell similar and associating a new word with a known English

word that sounds similar. Semantic encoding is involved with studying word formation rules, creating a semantic network in mind and remembering them in meaningful groups, finding the related antonyms or synonyms from already learnt words to attach it to new word and grouping words into categories to remember and memorise vocabulary. The contextual encoding may refer to the actions which learners take for long-term memorisation of known words, i.e., remembering the context or sentence where this word occurs at first meeting and remembering the word usage in context and contextually associating it with the first language.

Gu (2005) refers these encoding strategies as mnemonics and keyword methods. Previous research confirms these strategies effective in vocabulary learning (Meara, 1980; Pressley, Levin and Miller, 1982; Nation, 1982). It is pointed out by Higbee (1979) that these encoding strategies especially association and keyword method can be effective for straight memory tasks and vocabulary learning. Similarly, Paivio and Desrochers, (1981) approve the encoding and mnemonic memory strategies in vocabulary learning on the basis of their reviews on current studies associated with the use of mnemonic methods in L2 learning. Meara (1996) suggests that vocabulary learning and retention through mnemonics or encoding strategies can be the beginning or start of learning but not the end of the lengthy procedure of vocabulary learning as regular activation is required for effective retrieval. For this reason, Cohen (1987b) indicates that mnemonics should not be considered the replacement of other VLSs. He (ibid) further

suggests that memory strategies should be used to complement the other VLSs by facilitating retrieval of lexical items in ESL learning.

Crow and Quigley (1985) compared a traditional approach to vocabulary instruction with an approach based on the semantic fields of words that appeared in college-level reading texts in their study. The participants were divided into two groups 1) experimental group and 2) control group. Half of the vocabulary items presented to experimental groups were randomly selected and presented to control groups. The findings of the study implicate the use of the semantic field approach. It also identified that learning semantically and closely related (e.g., the likeness of their meaning) vocabulary items at the same time may not be effective in learning. For example, if a required response from learners is different for each semantically associated item, this will cause interference resulting in the learning of lexical items more difficult (Higa, 1963; Nation, 1990; Tinkham, 1993; Nation 1994).

Some studies report the usage of contextual encoding strategies (Gu, 1994; Sanaoui, 1995; Gu and Johnson, 1996; Gu, 2005) and their benefits in learning vocabulary. Based on Gu and Johnson (1996) empirical study on Chinese students to explore the role of VLSs, contextual encoding positively correlated with the learning outcomes. The contextual encoding strategies may involve, memorising the word together with the context of sentences, and creating a sentence by using the new unknown lexical item by putting it back into context to learn vocabulary.

After reviewing encoding strategies and their effects on long-term learning, the next section will focus on the activation strategies which are linked with long-term memory and retrieval of vocabulary.

2.4.5.6 Activation Strategies

Gu and Johnson (1996) report that activation strategies involve activation of learnt vocabulary in reading and writing activities, and in oral and written real-life communication. ESL learners activate their vocabulary by involving themselves in oral and written activities and refresh and revise vocabulary for longer retrieval. Nation (2015) notes that vocabulary learning happens in light of the fact that specific mental conditions are made which empower learning. Basically, vocabulary learning relies upon the number of exposures with each word and the nature of consideration at each meeting. The more profound exposure of the target vocabulary results in more probable learning of vocabulary.

The research findings of Pinsleur, 1967; Baddeley, 1997 indicate the effectiveness of the practice time which can be maximised by scheduling and organising activation of vocabulary rather than learning randomly. Learners start forgetting the learning immediately after the end of a learning session. After that major loss, the rate of forgetting slows. Taking this into account, the '*principle of expanding rehearsal*' recommends the review of new materials shortly after the initial meeting, and then at gradually increasing intervals for long-term learning and retrieval.

Based on his review on human brain research, Russell (2013) proposed that there should be a regular activation of vocabulary, i.e., setting up an explicit memory schedule. Learners should revise newly learnt words productively for five to ten minutes after the end of the learning session, then after twenty-four hours, then after one week later, one month later and finally six months later. In this way, L2 learners can activate their vocabulary knowledge by recycling them regularly and also using them in oral and written communications.

Following the definitions of and some research related to six individual VLSs (guessing strategies, dictionary strategies, note-taking strategies, rehearsal strategies, encoding strategies, activation strategies) categorised as curricular VLSs, the next section will describe extra-curricular VLSs.

2.4.6 Extra-curricular vocabulary learning strategies

As reviewed earlier (Section 2.2.4), with direct and focused formal learning of language and vocabulary, informal and incidental learning of vocabulary is also important for L2 learners. This informal learning of vocabulary may involve extra-curricular VLSs where ESL learners use these strategies deliberately by involving themselves in learning from having interaction with others, learning vocabulary from media exposures, English press and English literature. It may also involve learning vocabulary by reading English magazines, newspapers, novels, poetry, watching English movies and TV programmes, listening to English music, sports commentary, and interacting with native speakers. In addition to classroom input, there may be numerous sources for learning L2 vocabulary which is easy

to find. These sources are available in different forms, e.g., films, songs, TV programs, stories, the internet and novels (Alsaif and Milton, 2012).

The research in the past focused only on individual extra-curricular VLSs (Maley, 1987; Strevens, 1987; Milton and Meara, 1995; Grab and Stoller 1997; Schmitt, 1997; Schmitt, 2000; Harris and Snow, 2004) and hardly any study has been carried out focusing on the group of the micro-extra-curricular VLSs as a whole.

Schmitt (2000, p.120) notes that in explicit learning, learners focus directly on the focused vocabulary which maximises the chances of vocabulary learning. However, it is also noted as '*time-consuming and too laborious*' to learn an '*adequately sized*' lexicon for ESL learners. The incidental learning of vocabulary involves usage of language in real life communication, which may give a double advantage to ESL learners. Compared to EFL learners, ESL learners have more opportunities to use extra-curricular VLSs for pleasure as well as for indirect or informal learning of vocabulary. It may impact on vocabulary learning, though, it is generally slower and more gradual as compared to the explicit learning (ibid). However, it is suggested that incidental learning can be faster if the amount of exposure is increased by using a combination of each of the micro extra-curricular VLSs. For example, learners may read English newspapers and magazines regularly. They may listen to English news, English music, and matches commentary. They may also watch English TV programmes, reality shows and movies. They may participate in the out-of-class events where the mode of communication is English. They may interact with native speakers and may also be involved in real life communication in English. This sort of learning may be

linked with sensory memory store and provides receptive input of vocabulary. By using the above-reviewed strategies (guessing strategies, dictionary strategies, note-taking strategies, memory strategies rehearsal, memory strategies encoding and activation strategies), this receptive knowledge can be transformed into productive knowledge.

Gu and Johnson (1996) suggest the balanced approach of learning vocabulary by using a variety of VLSs appropriately. Following their suggestion, it may be sufficient to apply a balanced approach towards using both curricular and extra-curricular VLS to work well. When ESL learners use curricular VLSs, it may facilitate direct learning of vocabulary which involves manipulation, focused thinking, and focused mental effort resulting in more long-term retention. However, applying extra-curricular VLSs may also add incidental or informal learning from exposures of English media, press, and native speakers' interactions. A long-term retention of incidentally learnt vocabulary may be ensured by increasing the number of exposures and by regular activation of already met words in doing oral and written real-life communications (ibid).

The next sections will describe nine extra-curricular VLSs, categorised into three groups (a) exposure to English media, (b) exposure to English press/publication, and (c) social interaction.

2.4.6.1 Exposure to English Media

Exposure to English media and modern technology is often involved in L2 learning and facilitating vocabulary acquisition. During out of class or out of

academic contexts, ESL learners may use computers, the internet, video conferencing programs (e.g., Skype, Facebook, WhatsApp, Viber), satellite, TV programmes, tele-text, and subtitles to learn vocabulary and L2 implicitly and explicitly. Harris and Snow (2004) suggest that "bearing this in mind it is worthwhile considering the value of technology in facilitating language acquisition" (p.90).

Listening to English songs and poetry are also considered effective in learning vocabulary because they are effective in retention due to their rhythmicity. Maley (1987) notes that "poetry is linguistically authentic. It is also emotionally authentic and thus provokes an equally authentic and individual response from the reader" (p.107). He (ibid) proposes that the phrase of songs and poetry are often made up of particular vocabulary which is striking and poignant. Due to this, the vocabulary of songs and poetry tends to stick in the memory. They seem to go on repeating in the memory consciously without any deliberate effort often remain in long-term memory. Once the songs are repeated in regular sequence, it facilitates acquisition.

Milton (2008) conducted a study to explore if vocabulary can be gained through listening to songs. In this study, a single native speaker of English who was at a low-intermediate level of Greek was asked to listen to a CD of Greek song once a week. He was provided with the English translation of the songs as well. He was asked to avoid any other exposures to Greek during the period of study. The results of weekly- and the post-tests indicated that there was a gain of vocabulary learning by the end of the eight weeks' study. Milton (2009)

highlights that “the relationship between long-term retention and repetition in the text is very striking” (p. 227).

Harris and Snow (2004) emphasise that while watching TV programmes, learners can easily understand what is happening despite a limited knowledge of the L2. It can give learners a sense of achievement and motivation. Learning vocabulary through listening and reading are vital for ESL learners. TV programmes in English can be a valuable source to learn vocabulary. ESL learners can get a reasonable input and revision of vocabulary through news, documentaries, and entertainment. Milton (2009) notes that “learners can learn very large amounts of vocabulary from informal tasks they enjoy doing-provided vocabulary learning is a focus of the activity” (p.229).

On the other hand, tele-text can be an ideal source of implicit reading which can also be used for more accurate vocabulary practice (Vanderplank, 2016). Tele-text may be a significant source of authentic reading which may be used effectively to reinforce new vocabulary through repetition of newly met vocabulary. ESL learners may use tele-text while watching their favourite programmes such as listening to music and songs, watching movies and documentaries, and watching games and listening to the commentary.

Harris and Snow (2004) note that TV programmes, English films, movies and TV soaps may also facilitate vocabulary learning especially through absorption in the form of subtitles. Often there are two types of subtitles available, 1) English movies with L1 subtitles and 2) L1 movies with subtitles in the L2. Both of these

may facilitate the input of new vocabulary. It may also retrieve and activate the already learnt vocabulary by absorbing it with the newly learnt words particularly for intermediate to advanced level learners (ibid).

Milton (2008) reports that learners can learn vocabulary from watching DVDs with subtitles. A study was conducted on a native speaker of English who had been learning Greek previously. The subject had been watching the film with English audio and Greek subtitles. The film's total duration was hundred minutes. However, the learner had to pause so that subtitles could be read. It took approximately two and half hours per viewing. The learner was assessed once a week for four weeks immediately after each session. The test results indicated that there was the learning of 40 words per viewing, which is comparable to a rate of about sixteen words per hour of study.

Strevens (1987) proposes that TV commentary on sports matches can be a fruitful source of interest in enhancing language learning. Listening to radio broadcast is an excellent mode of information which is also a valuable source of incidental listening and vocabulary input. ESL learners may easily record programmes, news and listen to recordings to learning vocabulary deliberately through this authentic contribution.

2.4.6.2 Exposure to English press/publication

Maximising exposure to English is a prerequisite for an efficient learning of the L2, and in addition to exposure to English media, this can also be done through English press and publications. "The pervasiveness of English-medium books,

magazines, newspapers and movies in most part of the world offers an almost endless resource" (Schmitt, 1997, p.216). Nation (2015) notes that extensive reading, e.g., reading texts for enjoyment can result in a wide range of learning outcomes, including vocabulary. A longitudinal case study of Grabe and Stoller (1997) reveals the impact of L2 reading on vocabulary gain. Their study explores the relationship between reading newspapers, exposure of English media about vocabulary gain. The participant of their study (ibid) spent five months in a non-native country. To learn the target language and vocabulary, the participant continued reading the newspaper daily for an hour and listening TV news. He also began to watch TV programs throughout the entire five months' period. His basic routine was reading the first page of the newspaper, reading articles while underlining all unknown words on the first page of the paper, and looking up the meaning of unknown words in the dictionary and re-reading the article for comprehension. He also prepared word lists in his note-book of the specific words which he focused during reading newspaper. He scheduled his note-keeping as forty words each day. In total, the participant looked up 3148 words during five months, and some of the words were looked up multiple times. He used to read the first page of the newspaper as mentioned above and the rest of the newspaper without looking up words, without underlining or looking up in the dictionary. This approach helped the participant to recycle and activate vocabulary. As he was also watching TV, same news was reinforced by TV news bulletins and TV programmes. He was also watching sports with commentary on TV along with reading sports newspapers. He was assessed after five months'

period. Vocabulary test results showed a significant progress of vocabulary during this period. This study (ibid) reports that reading newspaper, watching TV programmes and making and memorising vocabulary lists, using a dictionary for comprehension, and a regular activation of vocabulary may impact on vocabulary gain.

2.4.6.3 Social interaction

Non-native speakers may also learn vocabulary by interacting with native speakers. They may learn vocabulary by participating in activities where the mode of communication is the target language or use the target language for social purposes in real life situations. Schmitt (1997, p.211) asserts that interacting with native speakers would be an excellent way to gain vocabulary". Studies (Strevens, 1987; Milton and Meara, 1995) propose that when ESL learners get a chance to interact with native speakers whenever they want, it also increases vocabulary input which impacts on language acquisition. Having interaction with native speakers, having exposure of English speaking and listening by participating in out of class activities and communicating mostly in English with non-native friends can also facilitate vocabulary learning. Milton and Meara (1995) also reported that vocabulary learning could occur even if ESL learners communicate in the English with their peers instead of their first language.

Strevens (1987) reports that ESL learners learn the English language by interacting outside the classroom and involving themselves in social interaction

with native English speakers. He suggests that there are "always valuable resources to be found in the community outside the classroom" (p.171). These resources can be used deliberately to learn the L2 in actual real-life situations. Milton and Meara (1995) also conducted a study on non-native-speakers registered in an English Spoken Country University, and within six months, they gained 1325 vocabulary items by having social interaction with native speakers of English. It is a significantly greater amount as compared to these students previous learning average 275 words gain in their home countries. The study (ibid) implicate the impact of language exposure in out of the class social interaction.

This section has presented the definitions of individual VLSs as well as reviewing research related to those strategies. The next section will review the patterns of VLSs adopted by learners to learn vocabulary in different contexts and the impact of these strategies on their lexical gain.

2.5 Research into ESL/EFL vocabulary learning strategies

This section will review the findings of the relevant studies in relation to the adopted VLSs by the learners and their impact on vocabulary knowledge.

Most of the related studies in the last three decades explored the patterns of adopted VLSs by second and foreign language learners (Ahmad, 1989; Gu and Johnson, 1996; Fan, 2003; Kazi and Iqbal, 2011; Van-Zeeland and Schmitt, 2013; Zhang and Lu, 2015 and Fatima and Pathan,2016). There are also significant studies conducted on individual extra-curricular VLSs (Maley, 1987; Strevens,

1987; Milton and Meara, 1995; Grab and Stoller 1997; Schmitt, 1997; Schmitt, 2000; Harris and Snow, 2004; Milton, 2008; Milton, 2009; Alsaif and Milton, 2012). The findings and suggestions of these studies are reviewed in the previous section 2.4.6.

Most of the studies focused on exploring the patterns of VLSs used by the learners and measuring the impact of these strategies on the lexical gain. The findings of these studies are reviewed below.

2.5.1 Adopted VLSs and their impact on vocabulary learning

In Section 2.4, literature is reviewed to understanding the theory of VLSs. This section will review how practical these VLSs are in learning vocabulary. It also focuses on reviewing the adopted patterns of successful and unsuccessful learners to understand the significance and impact of VLS in vocabulary learning.

Most of the research in the related field so far confirmed a positive correlation between VLSs and vocabulary gain (e.g., Gu and Johnson, 1996; Kojic-Sabo and Lightbown, 1999; Fan, 2003). Some studies also verified the significant differences of adopted vocabulary learning patterns between high-achiever and low-achiever learners (Ahmad, 1989; Moir and Nation, 2002). Similarly, Abraham and Vann (1987), Medani (1988), and Gu (1994; 2003; 2005; 2010) explored language and VLSs adopted by the learners and report the visible difference of adopted VLSs between the high-achiever and low-achiever learners.

2.5.1.1 Meta-cognitive strategies

As reviewed in Section 2.4.4, meta-cognitive strategies play a significant role in vocabulary learning. These regulations seem to be the base of successful use of curricular and extra-curricular vocabulary learning strategies as reviewed below.

Sener (2009) investigated the relationship between VLSs and vocabulary size of Turkish EFL students. Sener (2009) found that the metacognitive strategies were most frequently used by the Turkish students as compared to cognitive strategies. Similarly, Kalajahi and Pourshahian (2012) discover the relationship between VLSs and vocabulary size of undergraduate students at the Cyprus University. The main findings of the study identify that most of the students successfully operated the psycholinguistic (memory and cognitive) strategies and metacognitive strategies. The study also specified that high proficient students used a variety of strategies and did not operate certain strategies only. The study found the relationships between the metacognitive (social and metacognitive) strategies and the vocabulary size of the participants. However, no connection was shown between the psycholinguistic strategy and the vocabulary size of the participants.

Later this finding was expanded by Safian, Malakar and Kalajahi (2014) investigate the VLSs among Malaysian ESL students at University Putra Malaysia. The participants were asked to fill in a set of a questionnaire of fifty-eight items in this quantitative study. The findings of the study show that students used mostly the five different categories of VLSs, i.e., determination strategies (dictionary and guessing strategies), social strategies and memory strategies. The

finding of the most and least used strategies showed that metacognitive strategies were used most frequently by undergraduates as compared to other strategies. On the other hand, social strategies were the least adopted strategies as compared to the other strategies.

Gu and Johnson (1996) survey 850 university EFL students in China, in order to establish the patterns of adopted VLSs and to explore how different VLSs were related to language learning outcomes. The descriptive statistics indicated that the participants used a variety of VLSs. Both Pearson's correlation and multiple regression analyses revealed that self-initiation, selective attention, and deliberate activation of newly learnt words consistently predicted both vocabulary size and general proficiency. Other predictors of success included contextual learning, dictionary, and note-taking strategies. Interestingly, Kojic-Sabo and Lightbown's (1999) study of 47 ESL and 43 EFL students produced strikingly the similar results, signifying that metacognitive strategies were most closely related to success in vocabulary learning and higher overall English proficiency. Milton et al. (2012) suggest that the time available for language learning is often strictly limited by the demands of other subjects in the curriculum. Milton and Meara (1998) also note that the time available for learning a foreign language plays the crucial role in language-learning success. The time management and learners' independent informal learning of vocabulary may play a major role in the successful learning of vocabulary.

2.5.1.2 Guessing, dictionary and note-taking strategies

As mentioned earlier, meta-cognitive strategies are linked with guessing strategies and dictionary strategies. The findings of the studies reviewed below indicate that learners' planning, choices of selecting vocabulary and VLSs, and organising their learning process by putting attention on the target knowledge to acquire it in sensory memory store play a positive role in learning. Guessing strategies, dictionary strategies and note-taking strategies are indicated as effective learning methods used by the learners to learn vocabulary.

Gu (2003a) conducted a case study on two Chinese EFL students. The two learners reported in this study represent only a small proportion of successful and unsuccessful Chinese EFL students. The results of the study indicate that high-achiever learner demonstrated high levels of selective-attention and self-initiation, and employed a broad range of VLSs. The successful learner used guessing strategies along with the dictionary strategies for comprehension and negotiation between dictionary definitions and contextual guessed meaning. This participant also prepared various types of notes when he felt necessary and spent considerable time on and demonstrated remarkable skill in memorising word lists. He tried to use some of the words he had just learnt to activate the knowledge and skill aspects of vocabulary learning and sought to find and create opportunities to use English in real life situations. In contrast, the low-achiever learner did not use dictionary or memory strategies.

Similar to Gu and Johnson (1996), Fan (2003) explore the *strategies that are conducive to learning vocabulary in general and the strategies* that are

particularly helpful for learning high- and low-frequency words in particular. The study also focuses on the differences among the frequency of use, the perceived usefulness, and the actual usefulness of vocabulary strategies. A vocabulary test and a VLS questionnaire were used for data collection in this large-scale quantitative study. The findings of the study indicated that the students most often used guessing strategies to guess the meaning. The students also used dictionary strategies to consolidate the knowledge of new words. The students were divided into three groups on the basis of vocabulary test scores and were categorised as high, middle, low group. The high scoring group used a mixture of VLSs. The high scoring group planned and focused their vocabulary learning inside and outside the class as compared to other two groups. The high group also used guessing strategies, dictionary strategies (pronunciation, definition, form, usage) most frequently as compared to the other two groups. On the other hand, the Low group used most commonly memory strategies to learn vocabulary.

2.5.1.3 Memory strategies (rehearsal, encoding, activation)

As mentioned in Section 2.2.3, once knowledge is stored in the sensory storage, the further learning process can be completed by using memory rehearsal, encoding and activation strategies. The findings of the study reviewed below show that these three VLSs can facilitate vocabulary learning.

A VLSs survey (Schmitt, 1997) was also filled out by the participants. To evaluate how VLSs predicted breadth and depth of vocabulary knowledge *structural*

equation modelling were employed. The findings of the study indicate that strategies that were used to learning the forms and associative meanings of words were significant predictors of both vocabulary breadth and depth knowledge. The study also shows that all of the VLSs, especially the memory strategies may improve the knowledge of both vocabulary breadth and depth.

Davoudi and Chavosh (2016) investigate the VLSs adopted by Iranian intermediate and advanced level learners. Iranian language learners with different levels of language proficiency used different patterns of adopted VLSs with varying frequency of use. The findings of the study revealed that mental linkages, memory strategies and auditory strategies were the most frequently employed VLSs respectively both advanced and intermediate level learners. On the other hand, strategies for self-motivation, strategies involving authentic language, and strategies involving creative activities were used the least frequently by both advanced and intermediate language learners. It was also found that advanced and intermediate language learners were significantly different from each other in all categories of VLSs except strategies involving creative activities. There were also significant differences between advanced and intermediate language learners in all classes of VLSs. In other words, VLSs were used by the advanced students most frequently. Similarly, Nemati (2008), Chang and Chang (2009), Celik and Toptas (2010) find significant relationships between the frequency of use of VLSs and language proficiency.

This section reviewed VLSs used by learners; the next section will focus the patterns of adopted VLSs and their impact on vocabulary knowledge.

2.5.2 The adopted patterns of VLSs their impact on vocabulary knowledge

The adopted patterns of successful and unsuccessful learners are reviewed to expand the further understanding about the impact of vocabulary learning strategies on vocabulary knowledge. This section also focuses on the relationship and significant effects of VLSs on vocabulary knowledge.

Most of the studies reported that successful and more competent learners use VLSs more frequently as compared to the unsuccessful and less competent learners. The studies indicated that successful learners use a mixture of strategies to learn vocabulary, whereas unsuccessful learners applied only a few and limited VLSs. The research also identifies the fact that it is not just the matter of quantity but also the matter of quality which makes VLSs effective in learning vocabulary (Mongkol, 2008; Doczi, 2011). Medani (1988) explores VLSs of successful and unsuccessful learners and indicates that the overall levels of language and vocabulary learning of learners are directly related to their choice of adopted strategies. He identifies that the major differences between successful and unsuccessful learners lie in their adopted micro-VLSs, not in the macro-VLSs. There is no difference in the choice of VLSs at macro- level as both successful and unsuccessful learners tended to use the macro-strategies equally. However, the adopted micro-VLSs were visibly different. The unsuccessful learners used only dictionary strategies to find the meaning of the unknown word. On the other hand, the successful learners used dictionary strategies for learning meaning, form, grammatical functions and usage of the word. This study

also reports that success in vocabulary learning is related to directly employing a variety of strategies to learn vocabulary.

Similarly, O'Melly et al. (1985) explore that more competent students used a greater variety of VLSs and adopted VLSs in ways that facilitate them to complete the vocabulary tasks successfully. The study also discovered that low achiever students apply only a fewer strategies and they frequently use strategies that may not lead to the successful task completion. This finding was confirmed and expanded further by the Ahmed's (1989) study which is among the first to evoke VLSs adopted spontaneously by Sudanese learners. The high-achiever learners were observed to be more mindful of what words they could learn, to give careful consideration to collocation and spelling, and to be more aware of contextual learning. By contrast, the low-achiever learners declined to use the dictionary and quite often ignored unknown words. The low-achievers were described by their clear lack of involvement in learning. The low-achievers additionally took each word as a separate item, unrelated to previously learnt words.

Similarly, a few other studies (Chern, 1993, Gu, 1994; Gu and Johnson, 1996; Gu, 2003; Gu, 2005, Gu, 2010) also specified that lower-achievement learners seemed to employ a very thin array of VLSs (e.g., only guessing or dictionary strategies). On the other hand, the high-achievement learners tended to use a variety of VLSs by adopting a combination of strategies to learn vocabulary. The findings of these studies also show that selective-attention and self-initiative play

a vital role in vocabulary gain when used along with dictionary strategies, activation strategies, and extra-curricular vocabulary learning.

Kojic and Lightbown (1999) survey patterns of adopted VLSs. The higher level of achievement was associated with the more frequent and elaborate strategy use. Poor performance was linked with lack of self-reported effort on the students' part. Results also indicate that success in vocabulary learning and higher overall English proficiency is related to the time and learner independence. The findings of this study suggest a strong relationship between the application of VLSs and levels of success in language learning. For example, it seems that learner independence and time management towards using VLSs are indeed the most important VLSs. Both time and independence are associated with the vocabulary learning profiles of the two most successful groups. On the other hand, students who show the lowest proficiency did not use these two strategies. The outcome of this study is very much in line with previous research findings obtained by scholars working on language learning strategies in general (Wenden and Rubin, 1987; O'Malley and Chamot, 1990; Oxford, 1990) as well as with VLSs in particular (Oxford and Crookall, 1990; Oxford and Scarcella, 1994). These studies emphasise the significance of self-awareness, self-monitoring, organisation, and active involvement of the learners in the use of VLSs and successful learning outcome. Gu (1996) emphasises that the successful learners seem to be those who initiate and select their choice of VLSs towards their vocabulary learning attentively.

Abraham and Vann's (1987) study investigates and explores the language learning strategies adopted by two learners. Each of them represents a successful learner and an unsuccessful learner of the language. The finding of this study indicates the visible difference in the patterns of adopted language learning strategies between these two learners. The successful learner is tended to put effort to achieve grammatical correctness and practice correct forms. On the other hand, the unsuccessful learner tended to practise the language in communications without considering focus on learning grammatical knowledge and proper form of language as compared to his successful peer. The successful learner used a variety of strategies, and he was also aware and trained to take meta-cognitive and cognitive strategies accordingly. His beliefs about the flexibility in using appropriate strategies, using a variety of strategies, selective-attention and self-initiative seem the right approach towards his successful language learning. For instance, he preferers to learn the correct form of the word to learn and practice. He also learnt the grammatical functions of the language and practised it in written and oral communication in academic and the ESL context. On the other hand, the unsuccessful learner learnt the language through an oral conversation without focusing other aspects of learning.

Gu and Johnson (1996, p.660) report that "learners seldom use one single strategy in learning vocabulary. Perhaps their choice of strategy combinations, rather than individual strategies, results in learning differences". Later in another study, Gu (2005) discovers the clearly different patterns of adopted VLSs of each group of successful and unsuccessful learners. His study findings indicate that

learners' vocabulary gain is related to their self-initiative and balanced selective-attention (e.g., guessing the meaning at the first meeting of the vocabulary item, then dictionary usage for meaning and comprehension followed by note-taking, memory and activation strategies along with extra-curricular VLSs. He proposes that rather than being used individually, many VLSs are often used concurrently by successful learners.

Ahmad (1989); Sanaoui (1995) and Schmitt (2000) note that active management of strategy use may have a positive impact on vocabulary gain. The successful learners use meta-cognitive strategies about an application of a variety of VLSs by structuring their vocabulary learning. The successful learners also regularly review and practice target words by using memory and activation strategies. The successful learners prepare their vocabulary notes considering the semantic relationships between new and previously learnt L2 words. Their profiles of adopted VLSs indicate that "they are conscious of their learning and take steps to regulate it. Poor learners generally lacked this awareness and control" (Schmitt, 2000, p.133). Later, Macaro's (2001) also highlights the same point by indicating that "one thing seems to be increasingly clear and that is that, across learning contexts, those learners who are pro-active in their pursuit of language learning appear to learn best" (p. 264).

Schmitt and Schmitt (1993) suggest that a usage of VLSs in combination may impact lexical gain. For example, learners may use more '*simpler*' VLSs (guessing strategies, dictionary strategies, note taking strategies) at the initial stages of vocabulary learning. After initial learning of word, learners may move towards

applying deeper and advance VLSs (memory strategies, encoding strategies, activation strategies). This way of using VLSs may promote the best balance between *speed of learning and long-term retention*. It is recommended that to develop a long-term rich knowledge of vocabulary, incidental vocabulary learning must be balanced with direct vocabulary learning (Nation, 2001; Schmitt, 2008). Incidental learning may facilitate learners to seek the receptive knowledge of vocabulary, and direct learning may help learners to enhance their receptive knowledge of vocabulary into the productive knowledge of vocabulary. Incidental learning of vocabulary may be learnt by applying the extra-curricular VLSs, and direct learning of vocabulary may be achieved by using curricular VLSs. Milton (2009) suggests that "the vocabulary uptake from truly incidental language exposure is usually negligible and that successful learners acquire large volumes of vocabulary from the words explicitly taught in the classroom and supplement their learning by targeting vocabulary in activities, like learning the words of songs, outside of class" (p.2). Previous studies report that there is not any single "best" strategy for vocabulary retention. Practically, L2 learners incline to adopt a variety of strategies in combination (Ahmed, 1989; Gu, 1994; Sanaoui, 1995; Gu and Johnson, 1996).

ESL learners constantly use a variety of strategies based either on their needs or beliefs about vocabulary and vocabulary learning (Abraham and Vann, 1987; Horwitz, 1987). Each VLS contributes to the successful or unsuccessful learning of vocabulary. An effective approach can be formed to lexical gain and a successful learning by a constant engagement of the combination of strategies by ESL

learners (Sanaoui, 1995). Gu and Johnson (1996) emphasise that "a more balanced and integrated approach is likely to be the most effective" (p.646). They further note that "how different learners combine different strategies and how this affects their learning outcomes warrant studying as much as, perhaps more than, the effects of individual strategies" (Ibid, p.647). Related studies indicated the effectiveness of intermingled approach of using VLSs in vocabulary learning. ESL learners incline to employ a variety of strategies in combination to learn vocabulary (Ahmad, 1989; Sanaousi, 1995; Gu and Johnson, 1996; Parry, 1997; Gu, 2005).

Gu (2005, p.69) specifies that "Consistent combinations of different dosages of various strategies from different approaches to vocabulary learning that might determine the learning results more than each individual strategy". Learning new word incidentally might be the only first step and would be carried on with cognitive choices of VLSs. For example, incidental vocabulary learning through guessing and extra-curricular VLSs is effective in vocabulary learning. However, it is not enough in developing a functional vocabulary in an L2 own its own. On the other hand, the intentional or direct learning of vocabulary through the dictionary, note-keeping, memory, and activation strategies can be more efficient with the collaboration of extra-curricular contextual learning.

The findings of the above-reviewed studies in this section highlight that successful learners use a mixture of VLSs to learn vocabulary. Their patterns of meta-cognitive strategies to learn vocabulary are different from the unsuccessful learners. For example, the successful learners seem more independent and well

trained in taking initiatives and select VLSs to learn vocabulary. As far as the impact of VLSs on vocabulary learning is concerned, the use of a combination of VLSs was found to be more effective in successful learning of vocabulary. The findings of the research indicate that successful learners use a variety of strategies. The approach towards using VLSs facilitate their *learning process* by engaging them in attention, rehearsal, encoding, and retrieval (see Section 2.2.3).

This chapter has so far reviewed vocabulary (Section 2.2), vocabulary learning in the second language (Section 2.3), curricular and extra-curricular VLSs (Section 2.4) followed by the review of research into VLSs in ESL and EFL context (Section 2.5). The next section will review the vocabulary learning patterns of adopted VLSs and their implications on vocabulary learning in Pakistani ESL context.

2.6 Vocabulary learning in Pakistani ESL context

English is the official language of Pakistan (Rahman, 2008) which is used in civil administration, bureaucracy, the legal systems, the defence forces, the media broadcast, and in the domain of education (Abbas, 1993). “The English Language has been an integral part of Pakistani official, economic, educational, and (in certain contexts) social life since its creation in 1947” (Mahboob, 2009, p. 178). The English language is mostly the medium of instruction in private and state schools, and at the Institute of higher education (Rahman, 1997). Some other languages also exist in Pakistan. Urdu is the National Language of Pakistan,

whereas English is learnt as a second language. Besides Urdu, six major and fifty-seven minor languages are spoken in the country (Rahman, 2006).

Good grades in English are required criteria to get admission in schools, colleges and universities in Pakistan, and to secure better employment opportunities. The National Curriculum for the English language acknowledges the significance of the English language by making English as a compulsory subject since early years of education (Ministry of Education, 2006).

English lecturers, teachers and curriculum designers have been granted fully paid United Kingdom-based relevant training to upgrade the standard of English teaching in Pakistan. Teachers are encouraged to use communicative learners-centred approaches to teaching the English language. Learners are also involved and trained in doing an independent study. As vocabulary plays a crucial role in mastering the language, learners are encouraged to apply language learning and VLSs to learn the English vocabulary and language. Some studies (Kazi and Iqbal, 2011; Fatima and Pathan, 2016) revealed that Pakistani learners from different academic backgrounds such as science, commerce and huminites use a variety of language learning and vocabulary learning strategies. They include curricular VLSs (selective-attention, self-initiative, note taking strategies, guessing strategies, dictionary strategies, activation strategies) and extra-curricular VLSs strategies (interaction with a native speaker, participating out of class activities where the mode of communication is English, English media and press) to learn English vocabulary and language. However, these studies are exploratory quantitative studies which focused only on exploring VLSs in Pakistani ESL

context. More empirical mixed methods studies are needed to explore the VLSs and their impact on successful vocabulary learning in this regard so that the profiles of Pakistani students in relation to their adopted VLSs and vocabulary learning can be explored.

2.7 Summary and gaps in the literature

As reviewed in this chapter, there is a reasonable amount of research dedicated to vocabulary, and learning strategies in ESL context in the last few decades. A number of studies have been conducted on VLSs (e.g., Ahmad,1989; Gu and Johnson, 1996; Fan, 2003; Gu, 2003b; Sarani and Kafipour, 2008; Tseng and Schmitt, 2008; Barcroft, 2009; Gu, 2010; Zhang and Li, 2011; Kalajahi and Pourshahian, 2012; Van-Zeeland and Schmitt, 2013; Zhang and Lu, 2015 and Fatima and Pathan,2016). Though both of the areas of vocabulary and learning strategies have received in-depth research "yet the place where they intersect- vocabulary learning strategies- has attracted a noticeable lack of attention. The research which has been done of vocabulary learning strategies has tended to deal with individual or small numbers of strategies, with very few studies looking at the group as a whole" (Schmitt, 1997, p.199). Unfortunately, after twenty years, still, the gap identified by Schmitt (1997) exists.

The studies mentioned above either focused on the description of VLSs adopted by specific learners or specific VLSs and their relation to vocabulary size. These studies revealed that learners use a variety of VLSs to learn vocabulary. As reviewed in Section 2.4, the studies of Gu and Johnson (1996); Wu and Wang

(1998); Hamzah, Kafipour and Abdullah (2009); Sener (2009); and Kalajahi (2012) have also investigated adopted VLSs of learners and the relationship between their adopted VLSs and learning outcomes. The findings of these studies implicate insights on the application of VLSs and their relationship with vocabulary size and language learning. These studies provide insights into the correlation of VLSs and learning outcome, patterns of adopted VLSs by successful and unsuccessful learners and the fact that successful learners use a variety and combination of VLSs to learn vocabulary and their integrated approach seems the most efficient in vocabulary and overall language learning.

In general, their studies revealed that there was a significant correlation between VLSs and vocabulary size, although, Kalajahi and Pourshahian (2012) found that there was no relationship between the VLSs and vocabulary size of their learners.

While these studies have been provided with some useful indications about the usefulness of VLSs in increasing learner's vocabulary knowledge, most of these studies used either quantitative or qualitative approach aiming at finding patterns of adopted VLSs of successful and unsuccessful learners. The rest of research work was dedicated to minutely observing learners' strategy choice and usage (Parry, 1991; 1993; 1997; Sanaoui, 1995; Schmitt, 1997). Research still lacks studies which determine long-term retention of vocabulary or progress to demonstrate effects of VLSs on vocabulary learning. To measure learners' progress or retention of vocabulary, mostly two types of vocabulary measures have been used thus far: 1) general language proficiency measure 2) specific vocabulary proficiency measure (e.g., Gu and Johnson, 1996; Mizumoto and

Takeuchi, 2008). However, Gu (2012b) speculates that it is due to the difficulty in manipulating an effective vocabulary size measure that very few studies have investigated the impact of VLSs on the progress of vocabulary. On the other hand, mostly two types of vocabulary measures 1) language proficiency 2) vocabulary proficiency have been used so far (e.g., Gu and Johnson, 1996; Mizumoto and Takeuchi, 2008).

There is a call for research which establishes a link between learners' choice and use of VLSs and their learning outcome in Pakistani and overall ESL context. Gu (2005) elaborates that "We need systematic studies of the natural processes of vocabulary learning in authentic foreign language learning situations with the aim of identifying the whole range of VLSs, finding out what works and what does not work, and what distinguishes the successful from the unsuccessful learners" (p.76). He further emphasises that the longitudinal studies are needed to discover suitability of VLSs in different tertiary learners.

2.8 Research Questions

The review of literature presented in this chapter suggests that previous studies on VLSs have tended to deal with either individual or a small number of strategies with very few studies looking at a group of strategies. To the knowledge of the researcher, no research has been carried out on the impact of curricular and extra-curricular VLSs on vocabulary gain in a Pakistani university students' context and in overall ESL context. This study is therefore designed to explore VLSs and their effects on vocabulary gain in a Pakistani tertiary context

to partially fill such a gap in the literature. A preliminary study (see Section 3.4.1) was conducted before finalising the research questions for the main study to consolidate these research questions raised after reviewing literature. The research questions are confirmed as follows.

RQ1: What are the curricular and extra-curricular VLSs adopted by Pakistani tertiary students to learn English vocabulary?

RQ2: What is the impact of the curricular and extra-curricular VLSs on vocabulary gain in this context?

To assess the impact of VLSs, vocabulary knowledge of the learners need to be measured. The next section will focus on measuring learners' vocabulary knowledge.

2.9 Measuring learners' vocabulary knowledge

Language learning also involves assessing learners for numerous purposes, such as placement, diagnostic, achievement and proficiency assessment purposes. Milton (2013) notes that "measures of vocabulary knowledge are particularly good predictors of performance in the four skills" (p.57). Milton (2009) emphasises that there were no standardised tests in the field of vocabulary testing for a long time. Read (2000) argues that the language testers tend to pay insufficient attention to vocabulary tests. On the other hand, the ESL researchers need vocabulary tests for their own research purposes. Due to this, most of the vocabulary tests are designed by the ESL researchers, not by language testers. There are a small number of well-established tests, which are used for the

purposes of comparisons and of assessing the different aspects of vocabulary knowledge in research. However, there is still a call for research to establish a comprehensive set of tests to measure every aspect of vocabulary knowledge.

Milton (2009) points out that the different methods are required to measure learners' receptive and productive vocabulary knowledge. The point is that "a single test could not possibly hope to measure every aspect of word knowledge" (Milton, 2009, p.16). Receptive vocabulary tests may contain vocabulary items aiming at eliciting the receptive knowledge. On the other hand, the productive vocabulary tests require a method that can elicit the productive knowledge of learners.

Milton (2009) highlights the usefulness and practicality of vocabulary tests in language learning. Indeed, the usefulness of vocabulary and syntactic knowledge as a general indicator of one's language proficiency has long been emphasised in the field of language testing too (Perera, 1984; Urquhart, 1984; Alderson, 1993; Weir, 1993; Nuttall, 1996; Shiotsu and Weir 2007). Many placement tests assess vocabulary knowledge, including 'Password (English Language Testing)' which is originally designed to be used by pre-sessional and in-sessional English courses in UK universities (Green, 2011). Cambridge's general English tests also used to have a separate *Use of English* paper, which is now combined with reading. However, language tests are usually designed to measure test-takers' overall language proficiency rather than just vocabulary knowledge, the number of tests (or sub-tests) whose construct is purely on vocabulary is relatively limited.

However, in the earlier twentieth century, different types of a vocabulary test, i.e., objective type and multiple-choice tests, vocabulary size tests, vocabulary knowledge tests were established to assess L2 vocabulary (Read, 2000). There have been further advancements in the recent years in vocabulary testing, and a number of vocabulary tests have been developed. There are frequency-based receptive tests, e.g., The Vocabulary Levels Test (Nation, 1990, 2001); The Checklist Yes-No Test (Meara, 1992); The Vocabulary Levels Test (Schmitt, Schmitt and Clapham, 2001); The X-Lex (Meara and Milton, 2003); The Size test (Nation and Beglar, 2007); The Phrase test (Martinez, 2011); The New Vocabulary Levels Test (McLean and Kramer, 2015). There are also frequency-based productive vocabulary tests, e.g., The Word Association Test (Read, 1998); The Productive Vocabulary Levels Test (Laufer and Nation, 1995;1999. Versions of these tests are available freely on Tom Cobb (available online and printable, http://www.lextutor.ca/tests/). It is beyond the scope of this study to go in depth to review and explore each test. However, some explore only vocabulary tests which are somewhat relevant to the selection of vocabulary tests in this study are briefly reviewed below.

The Vocabulary Size Test (VST) (Nation and Gu, 2007; Nation, 2008) focuses on measuring the overall vocabulary size and receptive vocabulary knowledge of learners. It follows a traditional four-option multiple-choice meaning-recognition format. On the other hand, *The Checklist Yes/No Test* (Meara, 1992) is based on a simple format where test takers are required to read lists of lexical items, recall the meaning and tick each of the items by mentioning '*yes*' (if they know the

word) and '*no'* (if the word is unknown). The test is easy to administer; however, guessing factors are unavoidable, and the test results may have a little demonstration of knowledge.

Nation's (1983;1990) *Vocabulary Levels Test* (VLT) is considered as the "nearest thing we have to a standard test in vocabulary" (Meara, 1996, p.38). Schmitt (2010a) notes that "perhaps the most widely used vocabulary size test in the ESL context is the Vocabulary Levels Test. It is called the Levels test because it focuses on vocabulary at four frequency levels: 2,000, 3,000, 5,000, and 10,000" (p.197). In addition, it also contains the University Word Level and words for this level are taken from a list based on a frequency count of words in university textbooks. These levels are based on the word-frequency data (Thorndike and Lorge, 1944; The General Service List by West, 1953; Kucera and Francs, 1967; Campion and Elley, 1971). Each level is also linked to some generic vocabulary learning objective, i.e., how much vocabulary is usually required for different purposes. Nation (1990) proposes that all learners need to know both the 2,000-word and 3,000-word levels. These words are adequate to engage in daily conversation to function effectively in English and are considered necessary to enable initial access to authentic reading. On the other hand, the 5,000-word level contains the words from the upper limit of general high-frequency vocabulary and is anticipated a prerequisite for independent reading. The words at the University level may facilitate learners in reading their educational materials. However, these words may not entirely fulfil the needs of ESL learners studying technical subjects such as accountancy, quantitative methods, statistics,

finance and business. Finally, the 10,000-word level represents the more common lower-frequency words of English language required to enable advanced usage in most cases. As far as the format of the test is concerned, the VLT involves word-definition matching which requires the test-takers to match the words to the definitions. The VLT is a validated receptive vocabulary measure (Read, 1988; Beglar and Hunt, 1999; Schmitt, Schmitt and Clapham, 2001) and it is considered suitable for placement and diagnostic purposes and may supply a profile of learners' vocabulary.

Following the receptive test, Laufer and Nation (1995; 1999) developed *The Productive Vocabulary Levels Test* (PVLT) by using the words and frequency levels same as the VLT Test (Nation, 1983, 1990). The PVLT uses the item format in which test-takers are required to fill in a blank for the target word in a sentence. As exemplified below, enough initial letters are given at the beginning of the blank to disambiguate between the possible alternative words which could be put in into the blank and to minimise the probable answers down to the target word.

1. *Every working person must pay income t----------.*
2. *The differences were so sl---------- that they went unnoticed.*
3. *There are a doz---------- eggs in the basket.*
4. *The telegram was deli---------- two hours after it had been sent*.

The most comprehensive validation study on the PVLT test was undertaken by Laufer and Nation (1999). Their study was conducted on four groups of EFL learners at different proficiency levels (i.e., high school 10th graders (*n* = 24), 11th

graders (*n* = 23), 12th graders (*n* = 18) and 1st year university students in the English department (*n* = 14)). The entire test (PVLT) had an internal consistency of 0.86. The findings also indicated the differences between the four groups of learners for the total scores and scores at individual frequency levels were significant. The findings suggested the gradual mastery of the successive frequency levels of the PVLT test as proficiency increases, indicating its ability to measure learners' vocabulary growth.

However, Schmitt (2010a) notes that the PVLT requires more validation studies to ensure its validity and reliability. He also points out a few issues regarding the PVLT format. For instance, some of the target words have only one letter to disambiguate them, while others have up to six, which questions its difficulty level of the various target words. There is also a question about what aspects of productive vocabulary knowledge the PVLT measures though Nation (1999) describes it as a test of active vocabulary. Laufer and Nation (1995) also found out some moderate correlations between the PVLT and the Lexical Frequency Profile suggesting some relationship between the scores on the PVLT and the participants' capability of producing vocabulary in their writing. Schmitt (2010a) emphasises that these issues not be raised to state the PVLT a problematic test. However, these issues highlight that there is not enough evidence to know its true value as a productive vocabulary instrument and needs more validation studies in this regard. This study uses the PVLT test despite its needs for more research because this test was considered the most suitable and appropriate to

assess the productive knowledge of vocabulary. The main rationale behind selecting PVLT to be used in this study is detailed in Section 3.3.2.1.

Chapter 3: Research Procedure and Methodology

3.1 Introduction

This chapter describes the research design and methods applied in this study on the exploration and investigation of vocabulary learning strategies (VLSs) and their impact on vocabulary gain. Firstly, this chapter explains and presents the details of adopted research design and methodology (Section 3.2). It then introduces the research procedure (Section 3.4) with the details of the pilot and main studies followed by ethical considerations in Section 3.5.

3.2 Research design and methodology

Schmitt (2010) suggests that "in doing research, we must always make methodology serve the research issues we are interested in exploring" (p.3). The research under investigation was designed as an empirical, large-scale, longitudinal, mixed methods study which combined both quantitative and qualitative techniques to answer the research questions (Section 2.8). The triangulation approach is adopted in the study to validate research findings and to explore results of research from different perspectives.

3.2.1 Longitudinal research design

This longitudinal study involved two phases of data collection with twelve months' gap in between to assess vocabulary learning progress of the participants of the study. To get an idea about what happened in between twelve months' period, VLSs questionnaire, diary reports and interview are used in this study at the second phase in which learners were asked about their vocabulary learning experience during twelve months' period. The researchers who have adopted a longitudinal research design in ESL contexts (Schmitt and Meara, 1997; Schmitt, 1998; Henriksen, 1999; Huckin and Coady, 1999; Schmitt, Schmitt and Clapham, 2001; Albrechtsen, Haastrup and Henriksen, 2008; Schmitt, 2008; Li and Schmitt, 2009) suggest that the longitudinal design of research is the most suitable in order to assess learners learning progress. Albrechtsen, Haastrup and Henriksen (2008) recommend that studies with a longitudinal dimension are found to be the most appropriate to trace the learning development of the individual learners over time and to enhance the

validity of the findings. Longitudinal studies have the potential to increase the validity of the inferences. A longitudinal research design may reveal various developmental pathways and can also document different types of interactions over time (Duff, 2006). Longitudinal research belongs to a family of research methods in which target information is gathered during a series of phases (Dornyei, 2007). According to Menard (2002), in longitudinal studies, data is often collected for two or more distinct time periods from the same participants and analysis involves some comparisons of data between periods to assess progress or change. Learning vocabulary in ESL context happens over time, and there is no doubt that research related to language learning or vocabulary learning can be most meaningfully interpreted from within a longitudinal perspective (Mallow, Reeder, and Forster., 1996; Ortega and Iberri, 2005).

Despite such suitability and strength, the longitudinal method is often found to be less feasible. Ruspini (2002, p.136) pointed out that "for most researchers, longitudinal research is still an unexplored land; fascinating but dangerous". It is considered expensive, time-consuming as data is collected in more than one phase, and it can be challenging if the same participants are needed to participate in various phases. It might be because of these difficulties involved in conducting a study following the longitudinal design that little longitudinal research can be found in the applied linguistics literature (Dornyei, 2007).

In this study, to overcome these challenges of the longitudinal design, a timeline was scheduled and strictly followed to organise in-time data collection and data analysis. A possibility of some participants' drop-out in the second phase of this

study was factored in the first phase of the study, and the number of participants was intentionally increased in the first phase to ensure a valid number of participants for planned statistical analyses, even if drop-out occurred. A constant contact with course managers was kept until the second-phase data was collected to minimise the drop-out rate.

3.2.2 Mixed-methods research design

This study employed mixed-methods, incorporating both quantitative and qualitative techniques. Johnson and Christensen (2004) define that the mixed methods research involves the mixing of quantitative and qualitative research methods. Dornyei (2007) notes that "a mixed methods study involves the collection or analysis of both quantitative and qualitative data in a single study with some attempts to integrate the two approaches at one or more stages of the research process" (p.163). He proposes that the mixing of approaches can be theoretically appropriate in longitudinal studies. The longitudinal studies are usually concerned with development and change which is complex and challenging to analyse and to understand complex phenomena to be captured in a longitudinal study, a combination of quantitative and qualitative approaches is often found to be appropriate.

The main rationales behind adopting this approach in this study are threefold: first, to get more comprehensive, valid findings; second, to answer research questions with in-depth findings by analysing them from multiple directions; and

third, to supplement the weaknesses of a quantitative or qualitative approach on its own.

Triangulation is recommended as an effective strategy in a study as research findings from different methods are considered as more than findings from a single method (Erzberger and Kelle, 2003; Sandelowski, 2003; Hammond, 2005). For instance, to get information about the VLSs used by learners, self-reported VLS questionnaires are used in many related studies reviewed in Chapter 2, Section 2.4. However, self-reported information could be biased or could involve over-statement of participants. It may also fail to obtain enough evidence to offer a comprehensive understanding of the complex matter. It is therefore considered necessary to provide triangulation which looks into this matter from different angles. In this study, self-reported questionnaire responses were cross-checked by diary study reports and interviews (see Section 3.2.2 for the explanation of these research instruments).

It has been demonstrated possible to combine elements of these different data sources in a coherent way (Wray, Trott and Bloomer, 1998). In this study, a quantitative approach was used to obtain an overall picture of what VLSs were applied, whereas a qualitative approach explored what, how and why VLSs were used by participants to learn English vocabulary. Richards (2005, p.36) explains that "qualitative and quantitative data do not inhabit different worlds. They are different ways of recording observations of the same world". Mixing methods has a great potential in most research contexts (Rossman and Wilson, 1985, p.627) and this technique has been widely adopted in VLSs studies to achieve the

in-depth findings as this method can offer the best of both qualitative and quantitative techniques (Dornyei, 2007).

According to Dornyei (2007), though quantitative and qualitative techniques are not beyond limitations, mixing them together in one study may provide a solution. For example, quantitative research may be overly simplistic, decontextualized and reductionist regarding generalisations, failing to capture the meanings (Brannen, 2005). In contrast, qualitative research may be too context-specific and employs unrepresentative samples. In a mixed-methods study, the sampling bias can be cancelled out if the selection of qualitative participants is based on the results of an initial representative survey. Alternatively, a quantitative phase can be followed by the qualitative component to neutralise this issue by adding depth to the quantitative results by putting flesh on bones. This point is further emphasised as "word can be used to add meaning to numbers and numbers can be used to add precision of words" (Ibid, p.45) which may provide multilevel analysis of complex issues with improved validity.

As such, it was thought that application of quantitative and qualitative approaches was desirable to answer the research questions of this study more accurately, since it would increase the strengths of both of these techniques by bringing the best of both these paradigms, and increase generalisability and validity of research outcomes through the convergence and corroboration of findings. This idea is one of the original design features of this research, as the

number of mixed-methods studies, particularly in the Pakistani ESL context, is limited in the literature on vocabulary learning.

3.2.3 Types of mixed-method design employed in the present study

Teddlie and Tashakkori (2009), state that the mixed methods designs can be classified into five families: Parallel mixed designs, sequential mixed designs, conversions mixed designs, multilevel mixed designs and fully integrated mixed designs. Leech et al. (2010), Cresswell et al. (2003; 2007; 2009) and Creswell and Clark (2011) identified mixed methods designs similar to Teddlie and Tashakkori's (2009) classifications and classified them by different names. Cresswell et al. (2009) classified the six most used mixed methods designs including three concurrent and three sequential designs based on timing, weighing, mixing and theorising.

Creswell and Clark (2011) recommend four key points that can be considered in choosing appropriate mixed methods designs at the initial stages of any study. These are 1) the level of interaction between the strands 2) the relative priority of strands 3) the timing of the strands and 4) the procedures for mixing the strands.

The level of interaction is the degree to which the two strands (quantitative and qualitative) are kept "independent" or "interact" with each other (ibid., p.64). In this study, quantitative and qualitative strands were implemented independently. That is, two distinct strands were kept independent in collecting

and analysing data and, these two strands interact only when drawing conclusions at the end of the study.

The relative priority of strands refers the relative importance or weighting of the quantitative and qualitative methods in addressing the research aims. Creswell and Clark (2011) point out three forms of the framework to determine the priority of the quantitative and qualitative strands within the research design: 1) the two strands are given equal priority; 2) the quantitative methods are prioritised over qualitative methods which are used in a secondary role; 3) the study emphasises on qualitative methods, and quantitative methods are used in as a secondary role. In this study, the two methods (quantitative and qualitative) were given an equal priority, and both of these strands played an equally important role in addressing the research questions.

Timing refers to the time the data sets are collected and the order in which the findings from the two data sets are used to answer research questions. Timing in mixed methods designs is classified into three categories 1) concurrent (both strands are implemented concurrently during a single phase of the study), 2) sequential (two strands are applied in two distinct phases), and 3) multiphase combination of timings (data is collected by implementing concurrent and sequential timing in multiple phases). In this study, multi-phase combination timing was utilised to collect and analyse quantitative and qualitative data sets. The study consists of collecting the quantitative and qualitative data sequentially in two phases, with one form of data collection following and informing the other. For example, quantitative data (Pre-vocabulary tests) were collected in

the first phase, whereas another type of quantitative (Post-vocabulary tests, questionnaire, diary study) and qualitative (interview) data-sets were collected in the second phase of the study.

In this study, the mixing of quantitative and qualitative approaches occurred at all stages, i.e., while designing the study, collecting data, analysing data and interpreting the findings. The research questions were established with both quantitative and qualitative methods in mind. Mixing during data collection occurred when quantitative data results informed selection of participants for qualitative data collection. Mixing also occurred during data analysis by analysing quantitative and qualitative data-sets independently. Then these two sets of results were triangulated at the interpretation stage of this study (Chapter 5). Findings from quantitative and qualitative data-sets were compared and discussed and synthesised (See Chapter 6) to allow further insights into the research questions.

The present study used an explanatory sequential mixed methods design (also called a two-phase model; Creswell and Clark, 2011). The study consists of first collecting quantitative data and then collecting qualitative data to help explain and elaborate on the quantitative results. The basis for this approach is that the quantitative data-sets are triangulated with qualitative data-sets to refine, extend and explain findings of the study (Cresswell, 2009). The procedures for implementing an explanatory sequential mixed methods design are outlined below in Figure 3.1. Each research instrument and each analysis method in Figure 3.1 will be explained in Section3.3.2 and Section 3.4.2.1, respectively. As

indicated in Figure 3.1, quantitative and qualitative data is collected in two phases sequentially. The quantitative data is collected first in the sequence which is followed by the qualitative data collection. The qualitative data is used to refine the results from the quantitative data. The three major steps are involved in this study. Firstly, quantitative data-sets (Pre- and Post-vocabulary tests) were collected in the first and second phase of the study. In the second phase of the study, quantitative data (VLS questionnaire and structured weekly diary reports), as well as the qualitative data (semi-structured interviews), were collected.

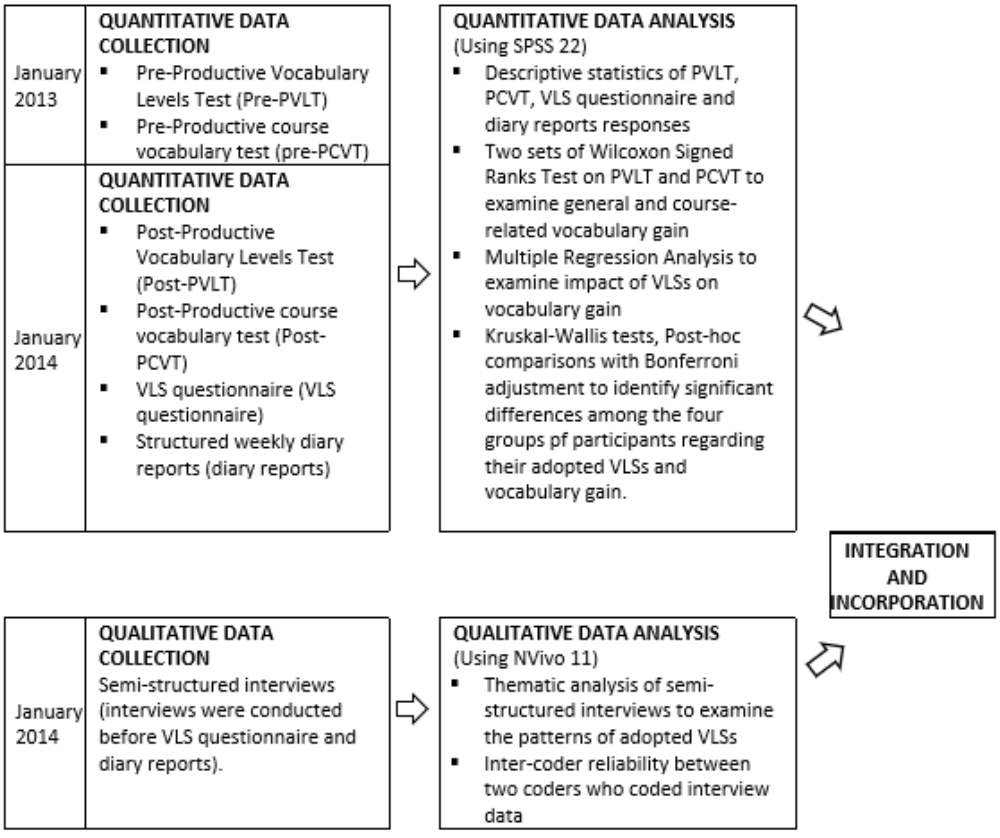


Table 3.1 Framework for research design

The main aim of the interviews was to elaborate and triangulate the findings from the VLS questionnaire and structured diary reports. However, semi-structured interviews (qualitative data) were collected before VLS questionnaire and structured weekly diary reports to minimise the effects of these methods on interview responses in the second phase of the study. Secondly, these two sets of quantitative and qualitative data were analysed separately and independently from each other using quantitative and qualitative analytic procedures. Thirdly, once the two sets of initial results were in hand, the findings of data-sets were triangulated, compared and reviewed before pursuing to the final step of interpretation.

This design has some strengths and advantages in which both types of data-sets are collected and analysed sequentially utilising the strengths of both quantitative and qualitative paradigms and minimising each other's limitations as noted above. It also increases the validity of findings by triangulating findings from different sources. Despite these advantages of this research design, the explanatory sequential mixed methods design is considered challenging. For example, due to the sequential data collection, much effort and expertise are required both in quantitative and qualitative methodologies. Researchers have to carefully decide the size of both quantitative and qualitative data as both data-sets are often collected for the same purposes but in different ways, i.e., quantitative to generalisation and qualitative for an in-depth description. Another challenge is a triangulation of the findings by mixing, merging and integrating two very different data-sets. These issues were lessened in this study

by organised planning throughout the study, by keeping in mind the clear rationale of the study and by developing the required knowledge of mixed-methods designs.

3.3 Data collection methodology

In this section, data collection methods used in the study are presented which includes the details of the participants (Section 3.3.1) and the research instruments (Section 3.3.2) of the study.

3.3.1 Participants

Undergraduate students from one of the reputed tertiary institutions of Pakistan, SKANS School of Accountancy, were recruited voluntarily for the participation in the study due to their suitability, relevance and availability. Students from all over the country join this institution for education purposes, and therefore they might represent the Pakistani tertiary ESL context. This sort of sampling is considered adequate in providing accurate research findings which may be representative of the whole population (Wardhaugh, 1992; Milroy and Gordon, 2003; Dornyei, 2007). External examination boards of this institution proposed a very strict policy for attendance which indicated the ideal availability of these students for research participation. The participants of the study were studying the English Language in their first year of the undergraduate course, as a compulsory module since the mode of communication and education for their studies in the institute is entirely English. Their English syllabus was very intensive, and a wide range of vocabulary was included in their course as well as

in their assessment. The researcher of this study had been teaching the English Language for eight years in this particular university and was aware of the Pakistani Higher Education background and the teaching and learning implications relevant to the context. English is studied as a second language formally as a compulsory module from the reception class to the Bachelor degree programmes in the Education system in Pakistan. These participants were majoring in Chartered Accountancy, and they were in the first year of their programme where they were studying '*Functional English*'.

3.3.1.1 The participants of the study and ESL context

In this section, an introduction of the course taken by participants of the study, information about their examination board, the details of their Syllabus, course, Textbooks and exam, applied vocabulary teaching methodologies, background info-prior document (questionnaire) used in the study are presented in detail.

3.3.1.1.1 Introduction of the course taken by participants of the study

Chartered Accountancy (CA) scheme is designed and provided to the students who want to join the profession after completing their 12-year education, namely, Higher School Certificate, A Level and other equivalent qualifications. The entry requirement for the programme is A-Levels with minimum two passes or equivalent qualification.

To become a Chartered Accountant, students are required to pass 17 (compulsory) modules and training. In the first year, they study *Functional*

English and *Communicational Skills* as a compulsory subject and the mode of communication and instruction is totally English.

Chartered Accountants are qualified and trained for big and small firms that offer fee earning advisory and management services to a variety of clients and businesses in the industrial, commercial and non-profit sectors. They audit the accounts of these clients and businesses and can also be involved in specialist areas of financial advice such as tax. Chartered Accountants are also employed in commercial organizations, banks, and the private and public sectors.

To become a Chartered Accountant, one needs to be motivated, possess analytical skills, numerical ability, a keen sense of what is going on in the world of business and finance, and personal qualities such as reliability and discretion. Students will require to study English language, English communication, business and corporate finance, economics, auditing, taxation, management and information systems which are taught entirely in the English language.

3.3.1.1.2 Examination board: The Institute of Chartered Accountants of Pakistan (ICAP)

ICAP is a professional body of Chartered Accountants in Pakistan and represents accountants employed in public practice, business and industry, and the public and private sectors. The Institute is a member of the International Federation of Accountants (IFAC) which is the global organization for the accountancy profession. ICAP has approximately more than 7,100 members who are currently working in 46 countries worldwide. Due to its prestige, thousands of students all over the country have been joining this prestigious fraternity (ICAP, 2017). To

satisfy the entry criteria, one needs to take English literacy and numeracy test. As noted earlier, the whole CA course is taught in English medium and therefore English language literacy is the essence of this course.

3.3.1.1.3 Syllabus detail, of course, Textbooks, exam

The main objective of the *Functional English* module, within which this research was conducted, is to ensure that candidates can communicate effectively in the English language. As far as the expected outcome of the course is concerned, it is considered that on the successful completion of this paper, candidates will be able to use a range of vocabulary correctly, construct sentences using correct grammar and demonstrate the ability of speed reading and comprehension.

The capability of this level requires an in-depth understanding of the subject matter and related concepts. The candidates are expected to develop the skill to critically examine and evaluate the related concepts and available information to make firm professional judgments and decisions.

Functional English syllabus includes learning meaning and application of vocabulary, practical use of grammar, comprehension and speaking, listening, reading and writing skills. Learners are expected to achieve the knowledge in terms of the meaning and application of the vocabulary so that they would be able to comprehend the role that language plays in different contexts. They are expected to achieve the receptive and productive knowledge of the vocabulary included in the syllabus. In their exam paper, they are asked to identify the correct meaning of the word and use synonyms or antonyms for the given words

in a sentence. They are asked to construct meaningful sentences using commonly used phrases and idioms.

3.3.1.1.4 Applied vocabulary teaching methodologies

As far as the researcher is aware, there is no study conducted on Pakistani students which comprehensively identified Pakistani ESL learners' profile. Except for teachers' interviews, class observations and researcher's own personal experience as a teacher in Pakistan, there was no information available to understand the background of the Pakistani students in relation to ESL vocabulary learning strategies. Participants of this study were asked to provide some information regarding their age, academic background and their main aims of learning English. This information was collected only to understand the demographic background of the participants and has not been used in the main analysis.

To get a profound understanding of Pakistani vocabulary learning context, alongside the main data collection of this research, six teachers were interviewed and their classes were observed to get the first-hand overview of how vocabulary is taught and learnt in Pakistan specifically by the participants of this study. This data is not used in the main analysis as the main aim of this data was just to get information about the Pakistani ESL context. A short summary of the analysis is provided below.

In the interviews with six teachers, they were asked how they teach English vocabulary to their students. It is found out that all of the six teachers used

mostly the similar methods to teach vocabulary. They used methods such as guessing from context, fill in the gap by choosing the most appropriate word, word match, sentence usage, asking students to cram the meaning and spelling, antonyms and synonyms by heart. Teachers explained that they do not give any particular vocabulary learning training to their students to learn vocabulary independently because they perceived that students in Pakistan are not independent, preferring to depend on their teachers. Teachers also indicated that learners often find vocabulary learning very difficult and they often seemed struggling in vocabulary learning. The teachers identified that the level of vocabulary and comprehension is very pathetic in Pakistani students especially students from state school background.

To appraise the particular vocabulary learning approaches adopted by students to learn lexis in ESL classes the techniques of systematic observation such as field work, scheduled checklists and audio recording were used to collect empirical data in addition to the main study as suggested by Denscombe (2007) “to collect data in real life situation involves field work, it requires the researcher to go in search of information first hand rather than relying on secondary sources” (p.207).

As a part of the additional data collection to inform the background of the research context, twelve lectures were observed in this study over the duration of five weeks in the second phase of the study. Class observations played an important role to find out the vocabulary learning activities and strategies used in the class during the ESL lessons. It was found that students were involved in

activities where they were encouraged to use guessing from the context and use the word in sentences. They were allowed to use dictionaries in the class during their lessons if they were unable to guess the meaning. During the lessons, the students were also preparing their notes often in the margin of their textbooks. Students were given homework to learn vocabulary meaning from their textbook vocabulary lists. Teachers preferred to teach grammatical rules and students were not involved in practice and productive tasks. About ninety percent time of each lecture was dedicated to teachers talk and these lessons were traditional teachers centred where teachers were teaching and talking and learners were just listeners.

3.3.1.1.5 Background info-prior document (questionnaire)

The VLSs questionnaire is divided into two parts to collect data about learners' background and applied vocabulary learning strategies. Background data was gathered to provide a better understanding of the context of this research and learners' profile. Learners were asked that how important for them to be proficient in the English language. About 69% of the students reported that it was very important for them to proficient in the English language. They mentioned that they were interested in the English language, English culture, English literature and over 40% of these students prefer to communicate in English with their family and friends. About 90% of the participants mentioned that their main aim to learn English was also to pass their exam. Half of the total participants believed that the English language was compulsory for their future career and worldwide travelling.

3.3.1.2 Number of sampling

In a mixed methods study, a reasonable number of sampling is required for quantitative and qualitative data analysis. For quantitative data, a large sample is considered "more representative and can lend greater weight to the claims" (Wray and Bloomer, 2006, p. 154). On the other hand, "interviews cannot be administered to as many people and care needs to be taken that the few whom you select for interview are truly representative of the population you are interested in" (ibid). 600 participants were originally approached, but the final data used for data analysis was from 578 students due to the initial elimination of unusable data. In this study, 578 Pakistani students studying on a full-time undergraduate programme at SKANS School of Accountancy, participated in vocabulary tests, VLS questionnaires, whereas, 120 participants were selected from this group for interviews and structured diary reports, using the following criteria.

Dornyei (2007) suggests that the main rationale of sampling for interviews should be to find individuals who can provide rich and varied insights into the research under enquiry. It must have a sampling plan with clearly defined sampling parameters, (e.g., participants, settings, events, process), and this sampling plan must line up with the purpose of the study. Given these suggestions, 120 participants (i.e., approximately 20% of the entire participants) were selected from the four categories of the entire 578 participants based on their vocabulary test scores.

The 578 participants were first divided into four groups based on their progress in course-related and general vocabulary shown in their vocabulary test scores. The participants whose vocabulary test scores were above the total average in both general and course-related vocabulary, were categorised as a group named the 'top in both group'. The participants whose course-related test scores were above the average but whose general vocabulary test scores were below the average were named the 'top in course-vocabulary group'. The participants whose general vocabulary test scores were above the average but whose course-related test scores were below the average were grouped into a 'top in general vocabulary group'. The participants whose test scores were below the average in both course-related and general vocabulary were grouped as a 'bottom in both group'. Then, 30 participants each from the four groups were randomly selected by the researcher for structured diary reports and interviews. The number of participants in different data sources in this study is summarised below in Table 3.1, Table 3.2.

Table 3.2 The number of participants in different data sources

Data collection instruments	Number	Percent
Pre-and Post-PVLT	578	-
Pre-and Post-PCVT		
VLS Questionnaire		
Structured diary reports	120	20.76% of the 578 participants
Interviews		

Table 3.3 The four groups of participants selected for interview and diary reports

Sampling out of 578	Top in both	Top in course	Top in general	Bottom in both
Selected for interviews and diary reports	30	30	30	30

3.3.2 Research instruments

The research instruments used in the study are presented in this section. These research instruments included two types of a vocabulary test, VLS questionnaire, structured diary reports and semi-structured interviews.

3.3.2.1 Vocabulary tests

Two types of a vocabulary test, 1) the productive Vocabulary Levels Test and 2) the productive course vocabulary test, were used in this study. These two tests measure the participants' productive knowledge for general and course-related vocabulary, respectively. These two tests were used as pre- and post-tests in this study, with an interval of one year. As noted in a pilot study (Section 3.4.1 below), these tests were piloted prior to the use in the main study.

3.3.2.1.1 The Productive Vocabulary Levels Test (PVLT)

As stated earlier (Chapter 2, Section 2.9), it has been pointed out that the PVLT still requires more validation studies. However, even with some limitations, the PVLT was thought of the best instrument available for the study. As reported in Section 2.2.4, the study focuses three aspects of productive knowledge 1) being able to produce the word to express the meaning 2) being able to produce the word in context to express the meaning, and 3) knowing the grammatical functions (Nation, 2001; Thornbury, 2002). The objective of the study is to discover the adopted VLSs and their influence on the gains of productive knowledge of vocabulary. Therefore, PVLT is used as this test is designed to

assess the productive knowledge of vocabulary especially covering the three aspects of productive knowledge followed by this study.

The PVLT test is used due to its suitability and practicality in the context of this study. The PVLT is a practical, productive vocabulary knowledge measuring instrument which is easy to administer and can be completed by participants in a short time. The PVLT is also easy to mark as there is only one correct word for each vocabulary item and each answer is supposed to be marked as correct or incorrect. A whole test can be fitted on the three pages and economical to duplicate.

As reviewed earlier (Section 2.9) the PVLT test can be used to investigate the aspects of productive knowledge and to assess vocabulary progression over a period of time. The PVLT is used to examine three aspects of vocabulary knowledge: i.e., knowledge of the meaning of the target word; knowledge of the word functions grammatically within a sentence; and more generally, can use the word accurately in the context. (for full version see Appendix 3.1).

3.3.2.1.2 The productive course vocabulary test (PCVT)

As reviewed earlier (Chapter 2, Section 2.9), the PVLT test also contains the University Word Level that is taken from a list based on a frequency count of words in university textbooks. However, this academic part of the PVLT is considered unsuitable for this study to access the specific course-related vocabulary as it may represent only the general academic context. The self-devised vocabulary measure, named as the productive course vocabulary test is

used here considering it the most suitable test in the framework of this study (for full version see Appendix 3.2).

The PCVT test, modified from Read (2000) and Nation (2001) was used to assess the participants' vocabulary progress specific to the courses they had taken, and the test contained 30 items. The participants were asked to write a sentence for each of the listed words (prepositions, idioms and words) to show that they knew what the word meant and how it should be used. The participants were allowed to choose a different form of the word if they wished. Read (2000, p. 175) considers this sort of tests that "this can allow the learners to demonstrate several aspects of their vocabulary ability: whether they understand the meaning of the target word; whether they know the word functions grammatically within a sentence and more generally, whether they use the word 'productively' in their writing".

The content of the test was based on randomly selected vocabulary items from their course book, e.g., one vocabulary item has been chosen randomly in every 100 words listed in the course book, and thus the 30 test items have been chosen from 3000 vocabulary items.

It is said that this sort of test may have a certain limitation related to cross-cultural differences in understanding what the task requires, and participants might produce already crammed sentences from text-book (Read, 2000). However, the participants were also already familiar with this sort of test design due to their exam experience in Pakistan, and they were also explained in L1 and

L2 about how to respond to the PCVT test to ensure their understanding of this test format.

Since it was a subjectively marked test, establishing the scoring validity of the PCVT test was vital. The marking scheme was informed by a series of expert focus group discussions, and four trained raters marked all the PCVT tests scripts to ensure inter-rater reliability. According to Read (2000, p. 176) "the validity of the test also depends on how the items are marked" and further suggested that the marking scheme should be practical, its application should be less time consuming, and it must reflect the aspects of word knowledge that need to be assessed. The initial marking scheme was adopted by Read (2000) and to finalise this initial marking scheme, an expert focus group was arranged at the Centre for Research in English Language Learning and Assessment (CRELLA), the University of Bedfordshire, with five language testing researchers and eight PhD peers fellows.

Table 3.4 Finalised Marking Scheme of the PCVT test

Finalised Marking Scheme	
2	Demonstrates a **full** understanding **and** accurate grammatical use.
1 1.a) full meaning+ partial grammatical accuracy 1.b) partial meaning+ full grammatical accuracy 1.c) partial meaning+ partial grammar 1.d) partial meaning	Demonstrates a full/partial understanding of the meaning and/or partial/ full grammatical accuracy.
0	Fails to demonstrate any understanding No marks are awarded for a sentence which clearly shows that the learner does not understand the target word or has confused it with a similar one.

The researcher presented the initial marking scheme along with the background of the study and the test specifications. Then, 36 example sentences which were taken from the actual students' responses data were given to each member, who were requested to mark example sentences according to the initial marking scheme. After feedback from individual members followed by a focus group discussion, the following marking scheme (see Table 3.3 that would allow partial scoring) was developed.

Then new example student responses were emailed to the focus group members, and they were asked to mark these sentences according to the new marking scheme. The presented marking scheme (Table 3.3) was then decided to be used in the main study since the focus group members agreed to its suitability to the test scripts of this research, and their inter-rater agreement was very high (Cronbach's alpha: 0.90.; perfect agreement: 51.95%).

Four raters who had a degree in TESL with PGCE as well as over five years' experience in teaching and marking in ESL contexts were recruited to mark the PCVT test scripts. A series of training was provided to the four raters to mark each of the PCVT answer sheets. The rater training proceeded as follows. The researcher has briefly explained the background and rationale of the research, followed by the full details of the PCVT test and its marking schemes. They were then provided with 36 example sentences from the actual student responses and were requested to mark individually. After ensuring the accurate marking according to the marking scheme, all 1156 (i.e., 578 learners x 2 test administrations) answer sheets of the PCVT were circulated to the four raters

with marking sheets, and they were requested to mark each item on provided marking sheets. They were asked not to write or mark on the actual answer sheets to ensure entirely independent marking.

3.3.2.2 Vocabulary learning strategies questionnaire (VLSs questionnaire)

The main aim of using a questionnaire in this study was to explore the patterns of VLSs adopted by Pakistani tertiary students. A questionnaire tends to be accepted as a reliable method of data collection in VLSs research (Gu and Johnson, 1996; Schmitt, 1997; Gu, 2005). The questionnaire can be considered "extremely versatile and uniquely capable of gathering a large amount of information quickly in a form that is readily processable" (Dornyei, 2007, p.101). As noted earlier, this project is a longitudinal study which is time-consuming due to data collection in different phases. The questionnaire was therefore considered ideal to collect a large volume of data in a relatively short period of time. Special care was however taken to construct the questionnaire as an ill-constructed questionnaire may produce unreliable data (ibid).

The VLS questionnaire (see Appendix 3.3) was adopted from previous studies (e.g., Alan, 1987; Garb and Stoller, 1997; Gu and Johnson, 1996; Harris and Snow, 2004; Peter, 1987; Schmitt, 1997; Zhang and Li, 2011) due to its suitability to answer the research questions of this study. The finalised VLS questionnaire used in the main study contained 105 items in a five-point Likert-scale format (never, seldom, sometimes, often, and always).

The content of questionnaire was based on curricular and extra-curricular VLSs which could be used in the classroom and outside the classroom to learn the course and general vocabulary in the Pakistani tertiary context. To assess curricular VLSs, 10 items of meta-cognitive strategies, 11 items of dictionary strategies, 9 items of memory strategies, 18 items of encoding strategies, 11 items of guessing strategies, 5 items of activation strategies and 8 items of note-taking strategies were adopted from Gu and Johnson (1996) (see Section 2.4 for definitions). Gu and Johnson's (1996) covers almost all of the VLSs which were reported to be used by Pakistani university students in an academic context in Kazi and Iqbal, 2011 and Fatima and Pathan, 2016 studies (see Section 2.6). Due to its comprehensive coverage, these curricular VLSs based on Gu and Johnson (1996) were thought to be the most suitable for this study.

As noted in Chapter 2, Section 2.6, there has been no large-scale and mixed-methods study which focused the extra-curricular VLSs in a Pakistani ESL context. The most previous literature on extra-curricular VLSs indicates that the nine extra-curricular VLSs mentioned below have been revealed by the researchers in ESL contexts (see Section 2.4.6). Therefore, on the basis of these studies, the 33 items of extra-curricular VLSs were devised under the nine categories in this questionnaire. These extra-curricular VLSs included social interactions such as learning English vocabulary by interacting with others and native speakers (Krashen, 1981; 1989; Oxford, 1990; Milton and Meara, 1995), reading English magazines, English newspapers, watching and listening to English news on TV, watching English movies and programmes with tele-text, listening to English

news on radio, watching and listening to matches commentary and English music (Peter, 1987; Grab and Stoller, 1997; Schmitt, 1997; Harris and Snow, 2004).

The Likert-scale, which is the most commonly used scaling technique in vocabulary learning contexts (Gu and Johnson, 1996; Schmitt, 1997; Zhang and Li, 2011), was employed in this study. It consisted of a series of five options regarding the frequency of their engagement in the activity/state described in each item while learning English vocabulary. The respondents were asked to indicate their choice by selecting the most relevant option. For example:

Curricular Vocabulary Learning Strategies	Never	seldom	Sometimes	Often	Always
1.1) I know which words are important for me to learn. مجھے معلوم ہے کہ کونسے الفاظ میرے سیکھنے کے لیے اہم ہیں					

Figure 3.1 Specimen of VLS questionnaire used in the study

Five-Likert scales are criticised “because of the concern that certain respondents might use the middle category” (Dornyei, 2003, p.37) which may prevent respondents from making a real choice. However, research (Nunnally, 1978; Robson, 1993) indicates that even if there may be possibilities that around 20% of respondents might miss-use the middle option, insertion or omission of a middle category does not affect the relative proportions of those expressing opinions and does not alter the results significantly.

The VLS questionnaire was self-administered pencil-and-paper form questionnaire, and participants were instructed to respond to each statement by selecting an appropriate option. All questionnaire items were closed-ended for statistical data analysis. The format of the questionnaire was divided into three

sections. At the start of the questionnaire, specific instructions were included to provide the respondent with a general introduction. The participants were instructed about how to respond to the questionnaire, i.e., ticking the relevant option regarding how frequently they engaged in the activity/state described in each item while learning English vocabulary for the whole year. Secondly, they were asked to provide their background information to ensure their age, L1 and L2, length and aims of learning the English Language. The third part of the questionnaire included the 105 items on VLSs. Following Dornyei (2007) the wording of the questionnaire was kept simple, straightforward and it was checked in the pilot study that there was no narrative with ambiguous or loaded words or sentences. Each questionnaire item was translated into Urdu (L1) along with English (L2) and both languages were presented, so that the participants could understand each questionnaire item accurately to give a valid response. A negatively leading construction such as *'you do not use a dictionary to learn vocabulary?'* was avoided. In order to facilitate the participants to engage in each item of the questionnaire individually, rather than marking only on one side of a rating scale, both positively and negatively worded items were included in the questionnaire (e.g., *I know which words are important for me to learn; I only focus on things that are directly related to examinations*). Subsequently, all the values on negatively worded questions were reversed in the data analysis.

As far as the length of this questionnaire is concerned, it contained 105 items, and it required less than half-an-hour to complete it. Any questionnaire with 4-6 pages long which requires over half an hour to complete may be considered

inappropriate to use in research as participants can get bored and withdraw in the middle. However, it is suggested that the length of a questionnaire may not matter if respondents are fully explained about the importance of the research (ibid). The participants of this study were informed the prospective benefits of the study in Pakistani ESL context to ensure that participants were aware of the significance of their participation.

The redundancy and unnecessary repetition of questionnaire items were examined in the pilot study to address the length issue, and only the most relevant questionnaire items were included to address each VLS to get information about the adopted VLSs. The layout of the questionnaire was carefully arranged, in the attempt of making it look short as well as marking it user-friendly. The participants have also explained the significance of this study in the Pakistani tertiary context.

3.3.2.3 Semi-structured interview

As will be noted in Section 3.4.1, the pilot study demonstrated that the semi-structured interviews would elicit rich data that would provide in-depth information on the learners' use of VLSs in this study. In the main study, 120 semi-structured interviews were carried out to triangulate findings from the VLS questionnaire and structured diary reports data.

Semi-structured interviews are defined as a one-to-one conversation that should have a structure and a purpose to interpret the issue under investigation (Krale, 1996).

Table 3.5 The rationale of the interview items

Interview Asked Questions	Aims
Q1) What do you think about the test instructions, did you understand what to do?	To check if the instrument of the vocabulary tests were clear.
Q2) How do you usually learn English vocabulary?	To explore an overall view to vocabulary learning, and to explore the patterns of meta-cognitive strategies (if any).
Q3) Have you learnt/focused any particular vocabulary during the past 1 year?	To find out what kind of vocabulary (general, course-related) is focused on by the participants during the whole year. To explore possible reasons for their progress (or non-progress) in PVLT (general vocabulary) and/or in PCVT (course-related vocabulary).
Q4) What do you do when a new/unfamiliar word occurs in text/communication?	To explore if students used guessing strategies and dictionary strategies etc.
Q5) How do you check the meaning of a new word (meaning, synonyms, antonyms, usage)?	To explore the patterns of adopted dictionary strategies (if any).
Q6) If you do not have dictionary/teacher/friend/internet available for checking meaning, and unfamiliar words occur, what will you do?	To explore if students used guessing strategies and if so, to explore the patterns of adopted guessing strategies.
Q7) [If YES to Q7] What do you do, or how do you guess the meaning of the word?	
Q8) What do you do after checking the meaning?	To explore the patterns of adopted note-taking strategies (if any).
Q9) [Depending on a reason to Q9] How do you keep the record of the newly learned words (if you do not make their lists)?	
Q10) [Depending on a reason to Q8-9] How do you prepare your notes or how do you do note taking of vocabulary items?	
Q11) What do you do to memorise the word/ to remember the meaning, spelling?	To explore the patterns of adopted memory and encoding strategies (if any).
Q12) What do you do to revise newly learnt or memorised words?	To explore the patterns of adopted activation strategies (if any).
Q13) Do you learn vocabulary by social interaction/ or by others how do you do or can you explain this? If so, can you explain how you do so?	To explore the patterns of extra-curricular VLSs (out of class events, native speaker's interaction)
Q14) What do you do to learn course-related vocabulary if there are any?	To explore an overall picture of adopted curricular VLSs.
Q15) Are there any other methods which help you to learn your vocabulary?	To know if another vocabulary learning strategy is used by the participants which are not mentioned in above questions.
Q16) What do you do to learn general vocabulary if there are any?	To explore what kind of extra-curricular VLSs are used by the participants (if any).
Q17) Among what you 've mentioned so far, what methods in your opinion are the most beneficial in learning vocabulary?	To explore students' perceptions about strategies they applied to learn English vocabulary

Although there was a set of pre-prepared questions (Table 3.4) related to this study yet the format was open-ended, and interviewees were encouraged to elaborate on issues raised in an exploratory manner (see the interview specimen in Appendix 3.4). Each interview had approximately eighteen questions. The rationale for each question is presented in Table 3.5. The interviewees were

given a choice to use L1 (Urdu) or L2 (English), and all of the interviews were conducted in the language preferred by the interviewees. The simple wording was used in the interview questions to make it easy to understand the questions, and ambiguous words, leading questions or jargons were avoided (Patton, 2002).

For example, Interview questions were short and straightforward that contained only one idea in each question to elicit details about each point to improve the quality of interview data. Leading questions were avoided. Interviewees were asked 'W*hat do you do when a new/unfamiliar word occurs in text/communication?*' Instead of *'Do you use guessing strategies?'* to explore whether they use dictionary strategies or guessing strategies. Similarly, the interviewees were asked '*How do you memorise vocabulary?*' Instead of *'How do you use memory or memory encoding strategies?'*. To increase the richness and depth of the response, follow-up questions were asked accordingly for more details and in-depth clarification. Interviewees were encouraged to express their views or final say in the final closing question (Q17).

Though Interviews are considered as a natural and socially acceptable technique of collecting information that most people feel comfortable with which can be used in mixed methods research (Dornyei, 2007), there are some limitations. For instance, it is a time-consuming method regarding collecting and analysing data. Interviewees may be too shy, non-serious or uncooperative during the interview. To minimise these issues, the researcher explained the significance of this study in the Pakistani ESL context and ensured the confidentiality of their identity.

3.3.2.4 Structured weekly diary report (structured diary reports)

Structured diary reports were used in this study to obtain the details of VLSs adopted by participants (see Appendix 3.5 for full version). Mackey and Gass (2005, p. 143) note that "diary study methodology can yield insights into the language learning process that may be inaccessible from the researcher's perspective alone". The diary study method used in this study may be defined as "the most commonly used approach in diary studies is giving the respondents traditional paper and pencil diaries. The entries can involve filling in a short questionnaire" and is called "a repeated measures quantitative questionnaire study method" Dornyei (2007, p. 155). According to Cohen, Manion and Morrison (2007), it may be demarcated as a highly-structured questionnaire with closed questions which can take several forms, such as dichotomous questions that require a yes/no response. Kothari (2004) defined it as a "collection of data through schedules proforma containing a set of questions being filled by participants" (p.104).

For the items types included in diary study reports, it is generally assumed that the more response options that each item contains, the more accurate data it can produce. However, according to Dornyei (2007), it depends on the rationale for studies, and there might be scenarios when only a polarised yes-no decision can be measured. Indeed, Cohen, Manion and Morrison (2007, p.324) note that "the dichotomous question is useful, for it compels respondents to come off the fence on an issue. It provides a clear, unequivocal response".

Data collection through this method can be very beneficial in extensive explorations and can lead to reliable results. A similar format with yes/no responses has also been used by Schmitt (1997) in one of his studies to find out 'which strategies are used and believed to be helpful for learners to learn vocabulary'. While Schmitt (1997) used it as a one-off questionnaire, the comparable format was used on a weekly basis for four weeks in this study and therefore given the name of structured weekly diary report. A total of 120 participants, who also took interviews, responded to these structured diary reports for four weeks. In these reports, they were asked to mention the details of their adopted curricular and extra-curricular VLSs in that specific week. In each diary report, the participants were also given a chance to specify any other method(s) they use to learn English vocabulary. The respondents were also asked to comment or provide extra details regarding their adopted VLSs. Similar to VLS questionnaire, the content of the structured diary reports was based on curricular (i.e., meta-cognitive strategies, guessing strategies, dictionary strategies, note-taking strategies, memory strategies, encoding strategies, activation strategies) and extra-curricular VLSs (i.e., exposure to English media, exposure of English press, social interaction) main based on Gu and Johnson's (1996) and Schmitt's (1997) taxonomy. For detailed categorisation, see Chapter 5, Section 5.2.1.

As data generated by structured diary reports were used to corroborate questionnaire and interview data-sets, the content of diary study reports was based on the VLSs categorisation addressed in the questionnaire and the

interview. It included self-initiatives and selective-attention towards weekly focused vocabulary (2 items), first interaction with new words and guessing strategies (7 items), dictionary strategies (7 items), note-taking strategies (15 items), memory and encoding strategies (8 items), activation strategies 92 items), and extra-curricular VLSs (11 items). They were also given an opportunity to specify any other VLSs that they had used in each of four weeks.

3.4 Data collection procedure

Prior to the main study of this research, a pilot study was carried out. This section presents the data collection and analysis of the pilot study, followed by the data collection procedure of the main study, which was modified based on the pilot experience.

3.4.1 The pilot study

A pilot study was conducted to trial the research methods and procedures before their application in the main phase of the study. Student participants of the pilot study were 33 adult learners of the SKANS School of Accountancy, Lahore, Pakistan (From the same cohort as the main study. For participants' detail see Section 3.3.1). The research instruments, such as the Productive Vocabulary Levels Test (PVLT), the productive course-related vocabulary test (PCVT), the vocabulary learning strategies (VLSs) questionnaire, structured weekly diary reports (structured diary reports) and semi-structured interviews were trialled to examine their reliability and suitability in relation to the rationale of the study.

3.4.1.1 The instruments in the pilot study

The Productive Vocabulary Levels Test, version A (Laufer and Nation, 1999) was used as Pre- and post-PVLT test in the pilot study to assess the participants' general vocabulary gain during four weeks' period of the pilot study. This version A of the PVLT test had four parts and each part had 18 items in each with 72 items in total.

Similarly, the PCVT test was used twice as pre- and post-PCVT test to assess the course-related vocabulary progression of the participants over the duration of the pilot study. The content of the PCVT test was selected from the vocabulary lists based on the syllabus (during the specific period of the pilot study) after consultation with the class teachers.

Based on the previous research on VLSs involved in vocabulary learning (Oxford, 1990; Gu and Johnson, 1996; Nation 2000; Schmitt, 1997; 2010; Zhang and Li, 2011), two different VLS questionnaires were adopted in the pilot study. Questionnaire 1 was based only on curricular VLSs, and questionnaire 2 was based on curricular and extra-curricular VLSs. Questionnaire 1 contained 80 items with the five-point Likert-scale response format (never, seldom, sometimes, often, and always). Questionnaire 2 contained 57 items in total and had the same response format of the five-point Likert-scale (never, occasionally, sometimes, often, and always). Both questionnaires were administered in the last week of the pilot study to the 33 participants during their class time.

Semi-structured interviews with students were conducted at the end of the period of the pilot study to obtain information about the VLSs adopted throughout the whole period of four weeks. Participants were divided into two groups based on their vocabulary gain; 1) successful students (whose test scores were above the average) and 2) unsuccessful students (whose test scores were below the average). Interviews were conducted with the 10 successful students and the 10 unsuccessful students to explore their patterns of adopted VLSs.

Structured diary reports were administered to the same participants who took part in interviews to obtain the details of VLSs adopted by participants during the four weeks of the pilot study.

3.4.1.2 Data analysis procedure in the pilot study

For data analysis, this pilot study followed quantitative and qualitative approaches. SPSS was used to analyse quantitative data in the pilot study, whereas a manual thematic analysis was conducted to analyse qualitative data. The main aim of this analysis was to examine the research tools to ensure if they are appropriate to be used in the main study to collect data. Three sets of statistical analyses were conducted in the pilot study, 1) reliability check of the questionnaire and vocabulary tests, 2) a paired sample t-test to explore the significant difference in pre- and post-vocabulary test scores and 3) correlation analyses to investigate how various strategies were related to vocabulary gains. Descriptive statistics were computed on the structured diary reports' data. There

was also a qualitative, manual thematic analysis performed on data generated by interviews.

3.4.1.3 Results and discussion of the pilot study

Each data collection instrument used in the pilot study was assessed to check if these instruments were appropriate to be employed in the main study. The applied quantitative and qualitative analysis and the results of the pilot study are discussed in this section.

3.4.1.3.1 The Reliability of the questionnaire (pilot)

Two VLS questionnaires were trailed in the pilot study. It was realised during the data collection that each questionnaire took approximately 60 minutes to be responded by the participants. Soon after the questionnaire administration, participants also pointed out in their qualitative feedback to the researcher that these questionnaires were repetitive as same questions were asked in both. Due to this issue, it was decided to use one questionnaire in the main study instead of two. Both of the VLS questionnaires were revisited and reviewed. It was agreed to delete the entire 32 items of curricular VLSs from questionnaire 2 due to their repetitiveness and redundancy issues after the series of qualitative feedback and post-graduate forum discussions at the University of Bedfordshire. During the data analysis, both the VLS questionnaires were merged and tested statistically for reliability issues.

To check the reliability of the VLS questionnaire, Cronbach's Alpha Coefficient was calculated for each of the VLSs segment by using SPSS. The reason behind

using Cronbach's Alpha Coefficient was to check the internal consistency of the questionnaire items and to find out if all the items are measuring the same underlying attribute of the target construct.

The reliability check identified 8 items with an item-total correlation value below 0.25. These 8 items (see Table 3.5 below) were revisited and reviewed, and analysis was computed again without including these 8 items and none of the items reflected an item-total correlation value below 0.25. The participants' qualitative feedback also indicated that these items were inappropriate due to the complex terminological language used in these items. Due to this, these items were deleted and decided not to be used in the main study.

Table 3.6 Details of the deleted items

1.1)I know when a new word or phrase is essential for adequate comprehension of a passage
3.7) Repeating the sound of a new word to myself would be enough for me to remember the word.
4.2) I associate a group of new words that share a similar part in spelling with a known word that looks or sounds similar to the shared part
4.3) I create a sentence in Urdu when I think a new word to a known word
4.4) I attach physical sensations to certain words (e.g., stinking) when I try to remember them
4.14) I analyse words in terms of prefixes, stems, and suffixes
4.16) I memorise the commonly used stems and prefixes
5.6) I look for other words or expressions in the passage that support my guess about the meaning of a new word

As seen in Table 3.6 below, the questionnaire used in the pilot study had a good internal consistency indicating that the same questionnaire could be used in the main study.

Table 3.7 VLS questionnaire reliability analysis (pilot study)

Strategies Scale	Cronbach alpha coefficient	N of items
Meta cognitive strategy	.84	10
Dictionary strategy	.84	11
Memory strategy	.87	9
Encoding strategy	.86	18
Guessing strategy	.82	11
Activation strategy	.89	5
Note-Taking strategy	.80	8
Extra-curricular VLSs	.95	33

3.4.1.3.2 The reliability of the Productive Vocabulary Levels Test (Pilot)

A Cronbach Alpha coefficient was also calculated to check the internal consistency of the PVLT test. The PVLT test had a good internal consistency with a Cronbach Alpha coefficient reported of .909 for pre-PVLT and .955 for post-PVLT as seen in Table 3.7.

Table 3.8 Reliability analysis of the PVLT test (pilot study)

Scale PVLT	N of Items	Cronbach's Alpha
Pre- PVLT	72	.909
Post-PVLT	72	.955

The corrected item-total correlation values were below 0.25 in four items of the pre-PVLT test (level-1 item 8,14,17 and level-2 item 3. This might be because of the small sample size of the pilot study, since, some of these items reflected item-total correlation values above 0.25 in the post-test. Furthermore, the analysis showed that even if these items from pre- and post-PVLT test were deleted, it did not positively affect the overall Cronbach Alpha coefficient of PVLT test. These items did not seem too difficult or problematic for graduate-level participants of the study. Therefore, it was decided that these items would not be deleted and would be kept in the main study. Another reason for keeping these items in the main study was the authenticity of the PVLT scales as they have been used by researchers in many other ESL contexts and found to be valid

and reliable (Section 2.9). However, it was decided to review the item format of the PVLT tests so that items would be clearer to the participants. In the main study, another reliability analysis was planned, and at that stage, any items that have an item-total correlation value below 0.25 would be deleted.

3.4.1.3.3 The reliability of the productive course vocabulary test (Pilot)

Another Cronbach Alpha coefficient was calculated in the pilot study to assess the internal consistency of the PCVT test. The PCVT test had a good internal consistency with a Cronbach Alpha coefficient reported of 0.719 for pre-PCVT and 0.911 for post-PCVT as seen in Table 3.8.

Table 3.9 Reliability analysis of the PCVT test (pilot study)

Scale PCVT	N of Items	Cronbach's Alpha
Pre- PCVT	20	0.719
Post-PCVT	20	0.911

As far as the PCVT tests were concerned, corrected item-total correlation values were not examined as in the main study, since the content of the PCVT tests was supposed to be changed per the syllabus of that specific period in the main study. At this stage, the only procedure of this test was trailed. It was decided that reliability of PCVT test would be examined in the main study by computing inter-rater reliability test as well as Cronbach Alpha.

3.4.1.3.4 A paired-samples t-test on test scores (Pilot)

A paired-sample t-test was conducted to examine a difference in the pre- and post-PVLT test scores. As presented in Table 3.9, there was a statistically significant increase from the pre-PVLT test (M=23.76, SD=9.30) to post-PVLT test (M=29.18, SD=13.22; t (32) =-5.17, p<.0005 (two-tailed). The mean increase in

PVLT test scores was 5.42. Cohen's d is 0.474, which is considered to be a medium effect size.

Table 3.10 T-test analysis, the PVLT test (pilot study)

	Mean	N	standard deviation	Mean of difference	t	df	Sig.(2-tailed)
Pre-PVLT	23.76	33	9.304	-5.424	-5.175	32	0.000
Post-PVLT	29.18	33	13.22				

A paired-samples t-test was also performed to examine if there was any difference between the pre- and post-PCVT tests. As shown in Table 3.10, there was a statistically significant increase from the pre-PCVT test (M=3.91, SD=2.88) to post-PCVT test (M=7.58, SD=5.72; t (32) =-4.85, p<.0005 (two-tailed).

Table 3.11 T-test analysis, the PCVT test (pilot study)

	Mean	N	standard deviation	Mean of difference	t	df	Sig.(2-tailed)
Pre-PCVT	3.91	33	2.887	-3.667	-4.859	32	0.000
Pre-PCVT	7.58	33	5.728				

The mean increase in PCVT test scores was 3.67. Cohen's d is 0.809, which is considered to be a medium effect size. (Cohen, 1988).

3.4.1.3.5 Correlations between vocabulary test progression index and the use of vocabulary learning strategies (Pilot)

Since it was not possible to carry out any multivariate analysis due to the small sample size of the pilot study, a series of bi-variate correlation was examined concerning participants' vocabulary progression (measured by the difference between the pre- and post-vocabulary test scores) and the use of each vocabulary learning strategy.

As shown below in Table 3.11, there was no statistically significant positive correlation between the use of VLSs and participants' vocabulary general

vocabulary (PVLT) progression. On the other hand, there was statistically significant positive correlation between the use of self-regulation (meta-cognitive strategies) and dictionary strategies and participants' course-related vocabulary (PCVT) progression. However, it is likely that the small sample size of the pilot study affected the results.

Table 3.12 Bi-variate correlation results (pilot study)

Vocabulary learning strategies	N	Correlation			
	33	Pearson-PVLT	Sig	Pearson-PCVT	Sig
Self-regulations		.16	.39	.38*	.04
Dictionary strategies		.30	.17	.42*	.02
Memory strategies		-.13	.51	.07	.74
Encoding strategies		.28	.17	.13	.53
Guessing strategies		.19	.31	.25	.17
Activation strategies		.35	.06	.25	.18
Note-taking strategies		.02	.91	.15	.42
Extra-curricular VLSs		.10	.74	-.40	.17

Interview and diary study data reflected that the 10 participants who showed the least progress in vocabulary learning reported that they followed only teacher's lecture and they learnt vocabulary just to get passing marks in the exam. They did not put any extra effort or use VLSs. They did not make notes or any vocabulary diary and never revised the learnt words. They also said that they did not use dictionary and guessing strategies.

On the other hand, the participants who performed well and showed progress in the vocabulary tests, mentioned in their diary studies that they adopted many VLSs to learn both general and course-related vocabulary. The same responses were reflected in the interviews with these participants. The qualitative analysis of interviews and descriptive analysis of diary study seemed to suggest that successful students mostly used meta-cognitive strategies, activation strategies, and guessing strategies to learn English vocabulary.

3.4.1.4 Development to the main study

(a) VLSs questionnaire

As noted above, the VLSs questionnaire was revised after the pilot study. The revised version contained 105 items in total and covered two areas in vocabulary learning. These areas are curricular VLSs (72 items including meta-cognitive strategies, dictionary strategies, memory strategies, encoding strategies, guessing strategies, activation strategies, note-taking strategies) and extra-curricular VLSs (33 items, related to, for example, exposure of English media and press, social interaction with native speakers). The response format uses the self-reporting five-point Likert-scale (Zhang and Li, 2011) as in the pilot questionnaire. It was decided that the questionnaire would be translated into L1 (Urdu) and presented in both English and Urdu so that it would be more accessible and straightforward to be understood in the main study. Moreover, its format would be revised in the main study as well. For example, the items would be renumbered accordingly. Due to the small sample size of the pilot study, the researcher could not perform factor analysis. It was decided that the factor analysis would be conducted with a much larger sample size to get categories according to the response of participants in the main study.

(b) The Productive Vocabulary Levels Test

The same version of the PVLT was decided to be used in the main study. The format of these tests was slightly revised to make it more convenient. For instance: in vocabulary level test-1, item 14 in the pilot study was printed as:

‘14. In order to be accepted into the university, he had to impr  his grades.’

It was revised to show the last two words clear as follows:

(14). In order to be accepted into the university, he had to impr ---------- his grades.

It was speculated that students might not have answered this item (or items like this) because students were not reading the whole sentence. Additionally, to avoid the effect of memory, a twelve months’ gap would be given between pre- and post-PVLT tests in the main study and the participants would not be given any of the answers or told in advance about the post-vocabulary tests.

(c) The Productive Course Vocabulary Test

It was decided that the PCVT test would remain in the same format, but the content of the test would be revised according to the syllabus of that specific period during the main study. The number of items was planned to be increased from 20 to 30. To avoid the memory effect, a twelve month’s gap would be given between pre- and post-PCVT tests in the main study and the participants would not be told about the post-test.

(d) Interviews and diary reports

The student interviews and structured diary reports were decided to be used with the collaboration of questionnaires in the main study. The number of

student participants for interviews and structured diary reports was decided to be increased (20% of the entire quantitative participants) in the main study.

In the main study, multiple regression was decided to be conducted using two vocabulary progression indices (measured by the pre- and post-tests of the PVLT and PCVT) and different types of vocabulary strategies (identified by Factor Analysis). This would be to determine the best predictors from all vocabulary learning strategies.

3.4.2 The main study

As mentioned in Section 3.2.1, this is a longitudinal study and data is collected in two phases. The PVLT and the PCVT test were administered to 578 participants twice as pre- and post-tests with an interval of 52 weeks. 120 of them took part in semi-structured interviews and structured weekly diary reports for four weeks. The VLS questionnaires were administered to the 578 students in phase 2 of the study. In the second phase of the data collection, after the post-vocabulary tests, all 578 students were divided into four groups based on their general and course-related vocabulary gain in test scores. As mentioned earlier (Section 3.3.1), these groups were the top in both, the top course-related vocabulary, the top in general vocabulary, and the bottom in both (general and course-related vocabulary). Then 30 participants from each group were selected randomly for the interviews and structured diary reports. Data collection phase and procedure of the main study is presented in Table 3.12.

Table 3.13 Data collection phase and procedure (main study)

Phase 1 (January 2013)	Phase 2 (January 2014)
• Pre-Productive Vocabulary Levels Test (PVLT) (N=578) • Pre-Productive Course-related Vocabulary Test (PCVT) (N=578)	• Post-PVLT (N=578) • Post-PCVT (N=578) • Semi-structured Interviews (N=120) • VLS questionnaire (N=578) • Structured weekly diary reports (N=120)

The PVLT and the PCVT test were conducted during the lesson times in the presence of the researcher and the class teachers. The participants were given an exam condition. This is, they were not allowed to talk or copy from each other's, use a mobile phone or any digital device, and they were given a time limit of 90 minutes for each test. The researcher explained that those tests were not for their course grading but only for research purposes and their participation would be entirely voluntary. They were also not informed that the same tests would be repeated as post-tests at the end of their course. Students were not allowed to take a copy of the tests, and they handed over papers back to the researcher before they left their classrooms.

The interviews were carried out before the VLS questionnaire, and structured diary reports to minimise the impact of noted vocabulary learning strategies in VLS questionnaire and structured diary reports. Selected 120 participants were arranged by coordination with course managers for four weeks. One-on-one, face-to-face interviews were carried out with the researcher. Interviews were audio recorded. A trained volunteer was arranged to take notes during the interviews so that the researcher can pay full attention in interviewing without breaking eye contact or communication to notes.

The structured weekly diary reports were collected for four weeks from the same 120 participants at the end of their course. They were gathered at the same place at the beginning of each week, and diary reports templates were handed over to them in the presence of the researcher and the course manager. The participants were informed about the rationale of the diaries and how to complete the diary template. While completing the reports, the participants were seated in the examination hall separately, and they were not allowed to talk to each other. However, they were encouraged to clarify any uncertainties individually with the researcher if needed. They were asked not to leave before returning the diary reports back to the researcher.

On completion of the interviews and diary reports, the VLS questionnaire was administered to the 578 participants at the end of study during lesson time in the presence of the class teachers under the same exam conditions as mentioned earlier. A group administration method was arranged while the participants were assembled as part of their English lesson. There was no time limit allocated. The researcher was also present, responding to any clarification requests if made by any participant.

3.4.2.1 The methods of data analysis

The following methods of quantitative and qualitative analysis were applied by using SPSS 22 and NVivo 11 keeping in mind the rationale and design of this study.

3.4.2.1.1 Reliability analysis of the instruments

Pallant (2005) suggests that the appropriateness of the scale depends on two key features that need to be addressed: validity and reliability of the scale as both of these aspects can affect the quality of the data obtained for the study. According to Pallant (2005), "the validity of a scale refers to the degree to which it measures what it is supposed to measure which involves the collection of empirical evidence concerning its use. The reliability of a scale indicates how free it is from random error" (p. 6). While a separate, empirical validation study of each research instrument was not possible within the scope of this PhD study, efforts were made to ensure validity by constructing vocabulary tests, VLS questionnaire based on previous studies and by modifying them based on findings from the pilot study.

An instrument cannot be valid if not reliable Pallant (2005). Reliability analysis was applied in the study to check the internal consistency of the instruments because reliability is a property of scores on a test for a particular population of participants (Wilkinson et al., 1999). A series of item and reliability analyses was performed to assess the internal consistency of the scales used in this study. Cronbach's Alpha statistics were applied to check the internal consistency of the PVLT tests. Inter-rater reliability was examined by using Cronbach's Alpha statistics as well as calculating absolute agreement rates to test the consistency of ratings between the four raters of the PCVT tests. As far as the VLS questionnaire was concerned, Cronbach's Alpha statistics and qualitative feedback were used to measure internal consistency and to check the validity of

the instruments both in the study. For diary reports, Cronbach's Alpha statistics were carried out, whereas, for interviews, inter-coder reliability between two coders was examined. The mixed-method design used in this study also enabled the researcher to cross-check data from multiple data sources and triangulate the results.

(a) The PVLT test reliability analysis

Cronbach's Coefficient Alpha (using SPSS) was applied to examine PVLT reliability which "provides an indication of the average correlation among all of the items that make up the scale. Values range from 0 to 1, with higher values indicating greater reliability" (Pallant, 2005, p.6). Reliability refers to repeatability, stability or internal consistency of the instrument and one of the most common methods applied by researchers is Cronbach's Alpha statistic which uses inter-item correlations to determine if constituent items are measuring the same domain (Kline, 1993, 1994; Bowling, 1997; Jack and Clarke, 1998; Rottray and Jones, 2007).

Item-total correlations were checked while examining PVLT test reliability analysis. Pallant (2005) points out that the values of Item-total correlation specify the degree to which each item correlates with the total score and lower values show that the item is measuring something different from the scale as a whole. The adjusted alpha if the item were to be deleted, was also used to check, if there is any item affecting alpha. It is suggested that if overall alpha is above 0.7 and if any item has an item-total correlation value below 0.25, then the impact of removing each item from the scale in the column, *the adjusted alpha if*

the item were deleted, should be examined. Similarly, if any of values in this column are higher than the final alpha value especially when it is below 0.7, these items should be removed, but if deletion of this specific item is not affecting the overall alpha value, then these items can be kept as it is (Pallant, 2005). The results of the PVLT test reliability analysis are presented in Chapter 4, Section 4.3.1.

(b) The PCVT test reliability analysis

Stemler and Tsai (2008) highlighted that consistency approaches to estimating inter-rater reliability are most useful when the data are continuous in nature. Similarly, the Cronbach's Alpha (Cronbach, 1951) is one of the three most popular types of consistency estimates which is appropriate to use where more than two raters are used to mark at tests (Crocker and Algina, 1986). The key advantage of applying Cronbach's alpha is its capability to produce a single consistency estimate of inter-rater reliability across multiple raters (Stemler and Tsai, 2008). However, to enable the analysis disadvantage is that each rater must give a rating on every case otherwise the unrated case will be left out of the analysis. It is noted that "Cronbach's alpha coefficient is a measure of internal consistency reliability and is useful for understanding the extent to which the ratings from a group of judges hold together to measure a common dimension". (Crocker and Algina, 1986 cited in Stemler and Tsai, 2008, p.23).

Three sets of inter-rater reliability tests (Cronbach's Alpha, Spearman rho, and Absolute agreement between four raters (see Section 4.4.1) were performed by using SPSS between four individual raters of the Pre-PCVT and Post-PCVT tests.

The main objectives of examining inter-rater reliability were to check the consistency of ratings by the four raters and to evaluate the newly developed marking scheme for PCVT. Standards were set for marking scheme and were passed these onto the four trained raters who were recruited to mark Pre- and Post-PCVT individually in their homes. Appropriate training was given to the raters so that they understood the marking scheme to mark accurately according to the set standards. As a check of their understanding of marking scheme, ten marked answer sheets from each rater were obtained and compared with the marking scores allocated by Expert Focus Group (see section 3.3.2.1.2) to evaluate whether the raters were marking accurately according to the desired criteria.

(c) The VLS questionnaire reliability analysis

A sequence of reliability analyses was performed to assess the internal consistency of the VLS questionnaire items. Streiner (2003b) suggests that "scales should have a high degree of internal consistency, as evidenced by Cronbach's alpha, the mean inter-item correlation, and a strong first component" generated by un-rotated Principal Factor Analysis. Rattray (2007) emphasises that "it is usual to report the Cronbach's a statistic for the separate domains within a questionnaire rather for the entire questionnaire" (p.334) because "alpha is strongly affected by the length of the scale" (Streiner, 2003a, p.101) and even a scale with uncorrelated items may have higher alpha values if the scale is longer or contains more than 18 items (Cortina, 1993).

Cronbach's alphas were therefore computed on each of the (vocabulary learning strategies) categories. Item-total correlations for each item were checked if all the items attained the values above 0.25 to ensure if items were correlated to each other and there was not a lack of homogeneity.

Streiner (2003a; 2003b) suggests checking redundancy if alpha values are above 0.90 as it may point more to redundancy than to homogeneity. Principal Factor Analysis is recommended to check if questionnaire items are causing redundancy (Comrey, 1988; Oppenheim, 1992; Feruguson and Cox, 1993; Anthony, 1999). Clark and Watson (1995) suggest that "items that load relatively strongly on the first factor (values above 0.35) and relatively weakly on subsequent factors (values below .35) are excellent candidates for retention" (p.317). The factors were extracted by using Principal Factor Analysis, and each item of the generated factors was examined. On the analysis of un-rotated factor matrix, no item was causing a violation, justifying that Alpha values above 0.90 in this item analysis suggests the good internal consistency rather than redundancy.

For the analysis, each response option was assigned a number for scoring purposes, i.e., never=1, seldom=2, sometimes=3, often=4, always=5. With negatively worded items, the scores were reversed. Finally, the scores for the items addressing the same group of VLSs were averaged to use them as variables in the analysis. For questionnaire reliability, see Chapter 4, Section 4.2.2.

(d) The semi-structured interviews inter-coder reliability analysis

Interviews (N=120) were coded by two coders independently. Coder 1 was the researcher of the study and coder 2 was a trained coder with a qualitative

applied linguistics research background. Coding scheme for interview data (see Section 5.3.2) was developed both deductively and inductively by the coder 1. This Coding scheme was provided to coder 2, and by using this coding scheme, coder 2 coded the 120 interview response data independently. Inter-coder reliability between the two coders was conducted using NVivo. For inter-coder reliability results see Section 5.3.1.

3.4.2.1.2 Descriptive statistics

Descriptive statistics were carried out to explore details of each data-sets (PVLT, PCVT, VLS questionnaire, diary study reports and interviews) to check assumptions before conducting inferential statistics. These descriptive statistics included *mean*, *standard deviation*, *the range of scores*, *skewness and kurtosis*, and *Kolmogorov-Smirnov statistic*.

To answer RQ1 (see Section 2.7), descriptive statistics were computed on the questionnaire responses (see Section 4.2), diary study reports (see section 5.2.1) and interviews (see Section 5.3.2) to explore adopted VLSs by the participants.

Series of normality tests were carried out to explore the distribution of scores of PVLT, PCVT, and the VLS questionnaire by obtaining skewness, kurtosis values. The negative values of skewness specify a clustering of scores at the high end (right-hand side of a graph), whereas Kurtosis values below 0 indicate a distribution that is relatively flat means too many cases in extremes. However, with reasonably large samples, skewness will not 'make a substantive difference in the analysis. On the other hand, Kurtosis can result in an underestimate of the

variance. However, this risk is also reduced with a large sample size (200+ cases) (Tabachnick and Fidell, 2001, p.74-75).

The normality of score distributions in the PVLT test (See Section 4.3.2), the PCVT test (see Section 4.4.2), the VLS questionnaire (see Section 4.2.2.2) was assessed by using Kolmogorov-Smirnov statistic. The significant results ($p<.001$) of the PVLT test, the PCVT test and the VLS questionnaire indicate a violation of the assumption of normality. Finally, 5% Trimmed Mean statistic was computed to explore if extreme scores were having a strong influence on the mean of each scales. The original mean and this new Trimmed Mean of each item of the PVLT, PCVT, and questionnaire were compared. As these two means values were similar, it showed that extreme scores were not having a strong influence on the mean of these scales (Pallant, 2005).

3.4.2.1.3 Factor analysis

The VLS questionnaire used in this study was adopted by previous research which included both curricular and extra-curricular VLSs. Exploratory factor analysis was conducted in the main study to explore the structure of the adopted VLSs and to summarise the data-sets in some more manageable categories before using them in multiple regression analysis. Factor analysis is considered a valuable tool that can be used in the development, refinement, evaluation of scales. Factor analysis may also be used to measure to gather information about the interrelationships among a set of variables, to find a way to condense the information contained in a number of original variables into a smaller set of

variables clustering them to a more manageable number prior to using them in other analysis such as multiple regression (Pallant, 2005; Field, 2009; William, Brown and Onsman, 2010). For the detail of findings of factor analysis see Section 4.2.1.

Like other statistics, it demands data screening, assumption testing and sampling adequacy (Field, 2009). While performing Exploratory Factor Analysis (EFA), the researcher made some important decisions on the basis of assumptions which EFA requires (Finch and West, 1997) and are presented below.

(a) Sample to Variable Ratio and sample size

There is a set of recommendations which provide guidance regarding how many participants are required for each variable, often termed, the sample to variable ratio, (Hogarty et al.,2005; William, Brown and Onsman, 2010). No study negates the importance of sample size for factor analysis since there are numerous recommendations in this regard. For instance: at least 300 cases are suggested by Tabachnick and Fidell (2001) whereas Hair et al. (2010) opine that sample size should be 100 or greater. Comrey and Lee (1992) define that 100 cases as poor, 200 as fair, 300 as safe and 500 as excellent for factor analysis. On the basis of above-reviewed literature, it may be assumed that data size of the study is adequate for EFA with the variable ratio 5:1 and total cases of 578. Each common factor has more than three or four loadings with most of the values above 0.60 and cumulative above the value of 0.70.

(b) Strength of the relationship among the variables/items

A correlation matrix can be used to check the strength of the relationship among the variables or items (Henson and Roberts, 2006). This can be done by examining the correlation matrix and looking for any values below 0.30. The correlation matrix should reflect all the correlation coefficients over 0.30 which is considered a minimum, while 0.40 is considered as important, and 0.50 as practically significant (Tabachnick and Fidell, 2001; Pallant, 2005; Hair et al., 2010). Data of this study satisfy these criteria as there is not any value below 0.30 and most of the values in the correlation matrix of the questionnaire are reflecting above 0.50. Another issue pointed out by Field (2009) is multicollinearity which occurs if variables correlate too highly though mild multicollinearity is not a problem for factor analysis. Multicollinearity can be checked by looking at the determinant computed by SPSS. If the determinant of the R-matrix is greater than 0.00001, then there is not an issue to be worried. For the VLS questionnaire data, R-matrix value was shown greater than the value of 0.00001 indicating no multicollinearity issues. Field (2009) emphasises that "multicollinearity can be a problem in multiple regression, and factor analysis can be used to solve this problem by combining variables that are collinear" (p.628). Factor analysis can be used to overcome collinearity problems in regression as the variables causing the multicollinearity will combine to form a factor. While rerunning the regression and using the factor scores as predictor variables, then the problem of multicollinearity should vanish because the variable is now combined into a single factor (Field, 2009).

(c) The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity

The KMO and *Bartlett's test of sphericity* were tested to check if the data-set of VLS questionnaire is appropriate for factor analysis (see Appendix 3.6). The KMO can be computed for individual and various variables and epitomises proportion of the squared correlation between variables to the squared partial correlation between variables (Field, 2009). KMO values below 0.5 are suggested as unacceptable (Kaiser, 1974). The KMO statistic differs between the values of 0 and 1. An estimation of 0 shows that the sum of partial correlation is extensive comparatively to the sum of correlation, demonstrating dissemination in the pattern of correlation resulting from a wrong interpretation. On the other hand, a value near 1 shows that patterns of correlations are minimised thus factor analysis should yield obvious and reliable factors. KMO values between 0.5 and 0.7 are fair, values between 0.7 and 0.8 are great, values between 0.8 and 0.9 are great, and values over 0.9 are magnificent. (Hutcheson and Sofroniou, 1999).

The KMO index ranged from 0 to 1, with 0.50 was considered apposite for factor analysis. Whereas *Bartlett's test of sphericity* was concerned, it was significant ($p<.05$) for factor analysis to be apt (Tabachnick and Fidell, 2001; Hair et al., 2010).

(d) Anti-image matrices

An anti-image matrix of covariances and correlation is produced by the Anti-image option which contains *measures of sampling adequacy* for each variable along the diagonal and should all be not less than 0.5 and ideally 0.9 indicating

adequacy of variables for factor analysis (Field, 2009). Consequently, KMO statistics for individual variables was checked by looking at the diagonal of the anti-image correlation matrices. All the values were above 0.5, and therefore no item was deleted due to the no *inadequate sampling* issue.

(e) Suitability of the rotational method

There are several methods of rotation available but the choice was based on what was the main aim of using factor analysis, and what rotation method was appropriate for the specific data-set (Field, 2009). EFA was used here due to its suitability to the nature of the non-normally distributed data-set of this study. Costello and Osborne (2005), and Fabrigar et al.'s (1999) suggest using Principal Axis Factor Method when data is not normally distributed. In the Principal Axis Factor Method, all the variables belong to the first group, and a residual matrix is calculated when the factor is extracted. Successively, factors are then extracted until there is large enough of variance accounted for in the correlation matrix (Tucker and MacCallum, 1997).

(f) Criteria in determining the factor extraction

Yong and Pearce (2013) emphasise that "extracting too many factors may present undesirable error variance but extracting too few factors might leave out valuable common variance." (p.89). Pallant (2005) suggests that "Factor extraction can determine the smallest number of factors that can be used to best represent the interrelations among the set of variables" (p. 174). It was considered imperative to use more than one criterion while deciding the number of factors in the study. Fabrigar et al. (1999), Tabachnick and Fidell (2001)

recommend that an exploratory approach should be followed by experimenting with different numbers of factors until a satisfactory solution is found. Some methods can be used to make the decision about the most appropriate extraction and were applied in this study, i.e. Kaiser's criterion (eigenvalues>1 rule), examination of a scree plot, the cumulative percent of variance extracted and parallel analysis. According to Thompson and Daniel (1996) "simultaneous use of multiple decision rules is appropriate and often desirable" (p. 200).

One of the most commonly used techniques is known as Kaiser's criterion or the eigenvalue rule. Factor should be attained only if they have the eigenvalues greater than 1 and the explained variance not less than 50-60% (Kaiser,1960; Hair et al. ,2010).

A scree plot consists of eigenvalues and factors (Cattell, 1978). Examination of scree plots can be a reliable method when the sample size is above 200, with cumulative reflecting high values. The cumulative percentage of variance accounts for by the current and all preceding factors. More details on this will be provided in Chapter 4, Section 4.2.1. The best idea is to select the solution that delivers the most desirable rotated factor structure to decide the number of factors to retain. Related studies (Gorsuch, 1983; Tabachnich and Fidell, 2001; Hair et al., 2010; Yong and Pearce, 2013) also suggested that interpretation of a scree plot should be subjective which requires minute judgement. Therefore, the relevant theory and previous research while determining the appropriate number of factors to retain are kept in mind.

(g) Selection of Rotational Method and interpretation

Rotation maximises high item loadings and minimises low item loadings, therefore producing a more interpretable and simplified solution, Oblique Promax rotation was chosen in this study. It permits correlations among factors and is often considered appropriate in social sciences and language studies. According to Yong and Pearce (2013) "whichever solution produces the best fit and factor stability, both intuitively and conceptually should be used" (p9). Different trials were made and evaluated by both statistical results and theoretical rationale to achieve more interpretable and obvious solution. For instance, following Yong and Pearce (2013) items were examined after rotation and assessed if "the item might load on the several factors, not load on any factors, or simply not conceptually fit any logical factor structure" (p9).

The labelling of the factors should be a subjective, theoretical and inductive process (Pett, Lackey and Sullivan, 2003) which was followed in the study. To assign some meaning to the generated factors, each of the factors was named, involving "substantive interpretation of the pattern of factor loadings for the variables" as recommended by Hair et al. (2010). It was evaluated which variables were attributable to a factor, and the loadings on one factor were assessed if they made any sense and if any themes can emerge. For example, all of the items in factor one represented curricular VLSs and all of the items in factor two represented extra-curricular VLSs. The generated clusters were also checked if they fulfilled statistical criteria of above 0.30 loading values of each item. The feedback from the Centre for Research in English Language Learning

and Assessment (CRELLA) expert team and fellow PhD peers were also received at postgraduate forums at the University of Bedfordshire on the categorisation of factors. The underlying structure of rotated factor solutions is presented in detail with interpretation in Chapter 4, Section 4.2.1.

3.4.2.1.4 Use of Multiple Regression Analysis

Multiple Regression tests were applied for the analysis in this study to answer the RQ2: **'**What is the impact of curricular and extra-curricular VLSs on vocabulary gain in Pakistani tertiary university context?'

According to Tabachnick and Fidell (2005, p.117-118), "regression analyses are a set of statistical techniques that allow one to assess the relationship between one DV and several IVs……. Multiple regression is an extension of bivariate regression in which several IVs instead of just one are combined to predict a value on a DV for each subject". Guar and Guar (2009) pointed out that multiple regression is the most common technique used by researchers to achieve these aims in social science research.

There are different types of multiple regression analysis depending on the nature of the studies under investigation, but three main types are 1) standard, 2) hierarchical, 3) stepwise. "In hierarchical (block-wise entry) regression predictors are selected based on past work and the experimenter decides in which order to enter the predictors into the model" (Fields, 2009, p.213). It was inappropriate to use this regression as there is not a single prior work in this context of Pakistani tertiary university students. "In stepwise multiple regression decisions about the

order in which predictors are entered into the model are based on a purely mathematical criterion" (Fields, 2009, p.212). A number of concerns with this method are raised, including "the danger of overfitting (having too many variables in the model that essentially make little contribution to predicting the outcome) and under-fitting (leaving out important predictors) the model [so it is suggested that] stepwise methods are best avoided" (Fields, 2009, p.213). In standard multiple regression, all the independent variables are entered into the equation simultaneously, and each variable is evaluated regarding its predictive power over and above that offered by all the other input variables.

For the purpose of this study, standard multiple regression was thought to be the most appropriate. Pallant (2005, p.141) suggests that standard multiple regression should be used if one has a set of variables and aims to explore how much variance in a dependent variable they can explain. This approach can tell how much unique variance in the dependent variable each of the independent variables has explained. This method seems the most appropriate for this research as it investigates how vocabulary test scores are able to be explained by the applied VLSs rather than testing how well independent variables predict after controlling other independent variables on the basis of theoretical grounds (fit for hierarchical multiple regression) or allowing the program to select which variable should enter in which order based on a set of statistical criteria (fit for stepwise multiple regression).

(a) Evaluation of Assumptions for Multiple Regression Analysis

Multiple regression makes some assumptions about the data which should not be violated. Before applying this analysis, data is examined to see to what extent the given data is appropriate for multiple regression analysis by meeting four sets of assumptions. These assumptions are 1) sample size, 2) absence of multicollinearity and singularity, 3) normality, linearity, homoscedasticity, and independence of residuals, and 4) absence of outliers (e.g., Tabachnick and Fidell, 2007).

(i) Sample Size

"In social sciences, we are usually interested in generalising our findings outside of the sample" (Field, 2009, p.220). He further notes that in order to obtain multiple regression results that are generalizable to other specimens, the analysis requires a certain sample size. There are different guidelines by the experts in this regard. Tabachnick and Fidell (2007) set the minimum criteria by providing a formula to calculate sample size requirements, taking the number of predictors into account: $N>50+8m$ (where m is a number of predictors). Green (1991), Pallant (2005), Dancey and Reidy (2007), Field (2009), and Gaur and Gaur (2009) recommend the same rule. On the other hand, Stevens (1996; 2002) puts forward, as a rule of thumb, 15 participants per predictor for the reliable equation in social science research. Field (2009) emphasises that "the simplest rule of thumb is that the bigger the sample size, the better the reason is that the estimate of R that we get from the regression is dependent on the number of predictors" (p.222).

This research employed six sets of multiple regression tests, multiple regression between 1) one dependent variable (PVLT) and two independent variables (curricular and Extra-curricular VLS), 2) one dependent variable (PCVT) and two independent variables (curricular and extra-curricular VLSs), 3) one dependent variable (PVLT) and sixteen independent variables (16 types of curricular VLS), 4) one dependent variable (PCVT) and sixteen independent variables (16 types of curricular VLS), 5) one dependent variable (PVLT) and eleven independent variables (11 types of extra-curricular VLS) and 6) one dependent variable (PCVT) and eleven independent variables (11 types of extra-curricular VLS). With this design, 578 participants with two, sixteen and eleven variables (predictors) were involved. The sample size of this study seems satisfactory according to the above-stated criteria. For example, by following some of the above rules, it is necessary to have around 240 (15 participants × 16 = 240) or 178 participants (50+8×16= 178) for each test condition.

(ii) Absence of multicollinearity and singularity

Multicollinearity occurs when there is a strong correlation (0.9 or above) between two or more predictors in a regression model (Pallant, 2005; Field, 2009). Singularity exists when both subscale scores and the total score of a scale are considered as independent variables and "as collinearity increases so do the standard errors" (Field, 2009, p. 224). It is highly recommended that multicollinearity and singularity must be checked before multiple regression analysis because both of above mentioned do not contribute to a good regression model (Field, 2009; Tabachnick and Fidell, 2007).

To ensure the absence of multicollinearity, correlation matrix tables were scanned to find if any of the independent variable(s) is highly correlated (r=0.9 or above) with other independent variables. The absence of singularity was checked by examining the nature of the independent variables. It was then confirmed that there were neither multicollinearity nor singularity problems with the current data-set. Another criterion of the variance inflation factor (VIF) and Tolerance was also used to test multicollinearity, and it was verified that none of the values was very low (near 0) indicating no possibility of multicollinearity (Bowerman and Connell, 1990; Myers, 1990).

(iii) Normality, linearity, homoscedasticity, and independence of residuals

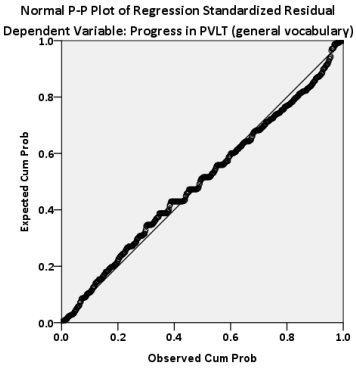
A preliminary screening through residuals was carried out check the following four assumptions. The scatterplot of residuals against predicted dependent variables scores (see Figure 3.5) was produced. Tabachnick and Fidell, (2007, p. 162) suggest that by using residuals scatterplots the following needs to be checked.

1. **Normality**: the residuals (the errors of prediction) should normally be distributed around predicted dependent variable scores.
2. **Linearity**: The residuals (the error of prediction) should have a straight-line relationship with predicted dependent variable scores.
3. **Homoscedasticity**: The variance of the residuals (the standard deviation of errors of prediction) should be approximately equal for all predicted dependent variable scores.
4. **Independence**: The residuals (the errors of prediction) should be independent of one another (Field, 2009).

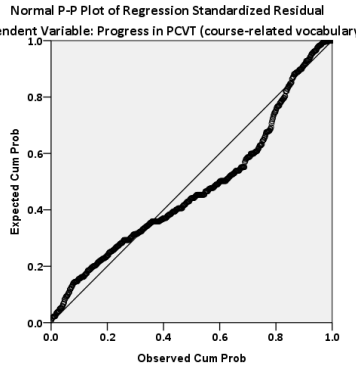
The first three assumptions are checked by reviewing normal probability plot and scatter plot. As presented in each of the normal probability plots in Figure 3.3, there was a reasonably straight diagonal line from bottom left to top right, indicating no major deviance from normality. The probability plots (Figure 3.3) conducted by the dataset of this study indicated that points are mostly aligned with the straight diagonal lines.

On the other hand, the standardised residuals scatterplots (see Figure 3.4), showed neither perfect centralised rectangular shape nor particularly deviated shape. However, it still seemed reasonable to use multiple regression with this data-set as pointed out by Tabachnick and Fidell, (2007) that failure to comply with these assumptions does not invalidate an analysis so much as weaken it. The fourth assumption was checked by considering the nature of the data of this study, and it is found out that all the values of the outcome variable are independent which satisfies this assumption of independence.

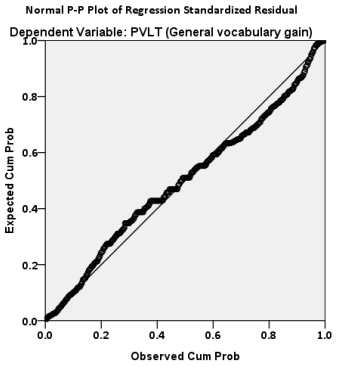
Set:1 Normal probability plot (DV: PVLT; IV: curricular and extra-curricular VLSs



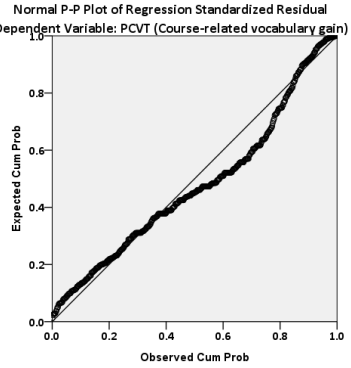
Set:2 Normal probability plot (DV: PCVT; IV: curricular and extra-curricular VLSs



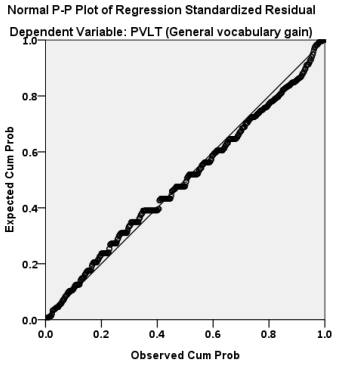
Set:3 Normal probability plot (DV: PVLT; IV: sixteen curricular VLSs



Set:4 Normal probability plot (DV: PCVT; IV: sixteen curricular VLSs



Set:5 Normal probability plot (DV: PVLT; IV: eleven extra-curricular VLSs



Set:6 Normal probability plot (DV: PCVT; IV: eleven extra-curricular VLSs

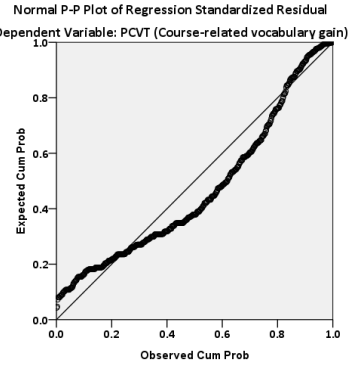
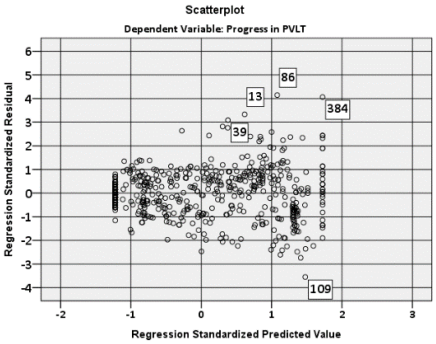
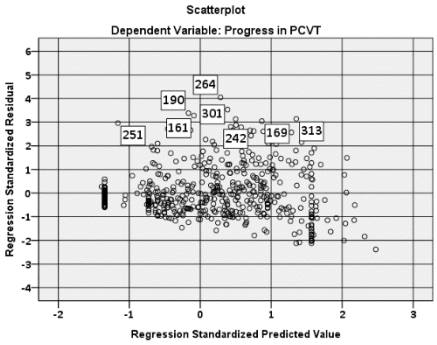


Figure 3.2 Normal Probability Plots of six sets of multiple regression analysis

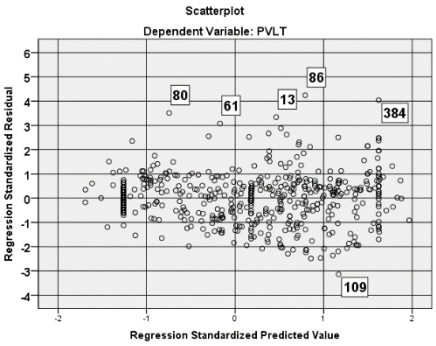
Set:1 Standardised residual scatterplot plot (DV: PVLT; IV: curricular and extra-curricular VLSs; 578 participants)



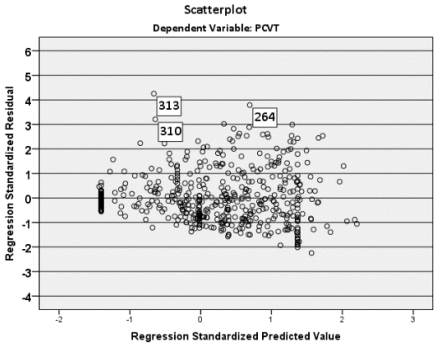
Set:2 Standardised residual scatterplot plot (DV: PCVT; IV: curricular and extra-curricular VLS; 578 participants)



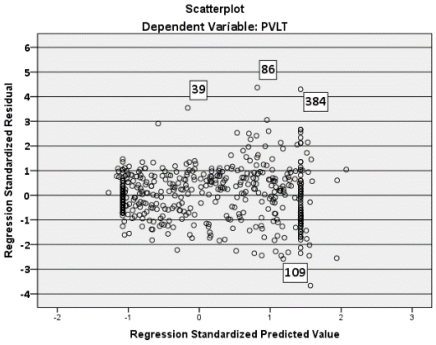
Set:3 Standardised residual scatterplot plot (DV: PVLT; IV: sixteen curricular VLSs; 578 participants)



Set:4 Standardised residual scatterplot plot (DV: PCVT; IV: sixteen curricular VLSs; 578 participants)



Set:5 Standardised residual scatterplot plot (DV: PVLT; IV: eleven extra-curricular VLSs; 578 participants)



Set:6 Standardised residual scatterplot plot (DV: PCVT; IV: eleven extra-curricular VLSs; 578 participants)

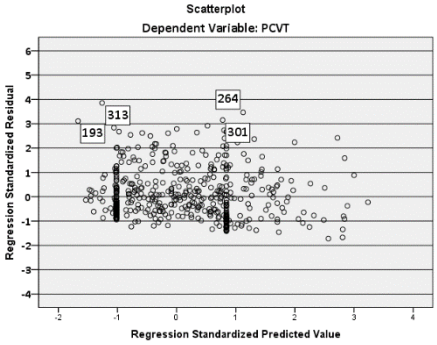


Figure 3.3Standardised residual scatterplots, six sets of multiple regression analysis

(iv) Absence of Outliers

Extreme scores are checked before computing multiple regression analysis as it can be sensitive to outliers. Pallant (2005) recommends that extreme outliers can affect the multiple regression results, so particular care needs to be taken while conducting this analysis. It can be checked by creating and analysing standardised residual plot (ibid). A standardised residual value above +3.3 or less than -3.3 is defined as outliers by Tabachnick and Fidell, (2007). Thirty cases were identified as outliers by the standardised residual plot are presented in Figure 3.6. The outliers were also checked by scanning the Mahalanobis distances that are provided by the multiple regression programs (see Table 3.13).

Table 3.14 Outliers and critical values

Set of analyses	IDs of outliers	Mahalanobis distance critical value 2-**13.816;** 16-**39.252; 11-31.264**	Cook's distance critical value, above 1
Set:1	13	Not exceeded	Not exceeded
	39	Not exceeded	Not exceeded
	86	Not exceeded	Not exceeded
	109	Not exceeded	Not exceeded
	384	Not exceeded	Not exceeded
Set:2	161	Not exceeded	Not exceeded
	169	Not exceeded	Not exceeded
	190	Not exceeded	Not exceeded
	242	Not exceeded	Not exceeded
	251	Not exceeded	Not exceeded
	264	Not exceeded	Not exceeded
	301	Not exceeded	Not exceeded
	313	Not exceeded	Not exceeded
Set:3	13	Exceeded	Not exceeded
	61	Exceeded	Not exceeded
	80	Not exceeded	Not exceeded
	86	Not exceeded	Not exceeded
	109	Not exceeded	Not exceeded
	384	Not exceeded	Not exceeded
Set:4	264	Not exceeded	Not exceeded
	310	Not exceeded	Not exceeded
	313	Exceeded	Not exceeded
Set:5	39	Not exceeded	Not exceeded
	86	Not exceeded	Not exceeded
	109	Not exceeded	Not exceeded
	384	Not exceeded	Not exceeded
Set:6	193	Not exceeded	Not exceeded
	262	Not exceeded	Not exceeded
	301	Not exceeded	Not exceeded
	313	Not exceeded	Not exceeded

The critical chi-square values should be determined by using the number of independent variables as the degree of freedom (Tabachnick and Fidell, 2007). According to this criterion, critical values for evaluating Mahalanobis distances values is 13.816 with two variables, 39.252 with 16 variables and 31.262 with eleven variables. The identified variables were checked by scanning Mahalanobis distances values table generated by SPSS, and none of the highest values exceeded the critical value except three cases. The residual statistics table was then checked regarding Cook's distance.

Tabachnick and Fidell (2007) suggest that if there is any case with values larger than 1, then extra care should be taken. In this data-set, none of the outliers exceeded the critical value of 1. The analysis was re-run after deleting outliers to check if these outliers have any effect on multiple regression analysis. However, the results depicted only a minimal difference. Therefore, it was decided to retain all identified outliers in the multiple regression analyses of this study.

The results of the preliminary analysis presented above seem to have satisfied most of the assumptions except for a few minor cases of violation. Stapleton (1995) states that "only in an idealised world is there a perfect model. The regression function is almost never exactly linear in the independent variables, the error probably does not have equal variance and are not normally distributed" (p. 145). Tabachnick and Fidell (2001, p.119) notes that "we might note that we have never, in many years of multivariate analysis with many data sets, found [any data set which fit all the assumptions]", and it is generally considered that a large data-set with minor violations may still be justified to be

used for multiple regression analysis because these assumption violations do not invalidate an analysis so much as weaken it. Therefore, the data-set of this study was considered appropriate to be analysed with Multiple Regression Analysis.

3.4.2.1.5 Non-parametric statistics

The Wilcoxon Signed Rank Test was conducted to examine whether there was any vocabulary gain between pre- and post-vocabulary tests. The Wilcoxon Rank Test was used here instead of a paired sample t-test, due to the non-normal distribution (see Section 4.3.3, Section 4.4.3) of the PVLT data. Non-parametric tests are assumption-free tests because they make fewer assumptions about the type of data on which they can be used" (Field, 2009, p.540). The Wilcoxon Signed Rank Test is a non-parametric test which is established for use when subjects are measured on two occasions and distribution of each data-set is not normal (Pallant, 2005).

In general, it is considered that non-parametric tests are less powerful and may fail to detect differences between groups that exist (Type ll error) (Pallant, 2005). However, Field (2009) notes that non-parametric tests are misperceived as less powerful than the parametric tests. Non-parametric tests may have an increased chance of a type II error. However, this can be true only with normally distributed sampling.

Kruskal-Wallis Test and post-hoc comparisons with Bonferroni corrections to p-values were performed to detect any significant differences among the four groups of students about applied VLSs and vocabulary gain. Kruskal-Wallis Test is

a non-parametric test which is suitable for non-normally distributed data and can be conducted to compare the scores on some continue variable for three or more groups (Pallant, 2005). As far as the post-hoc tests are concerned, the Bonferroni adjustment was elected to adjust alpha levels. It is probably the most commonly used in post-hoc tests because it is highly flexible, simple to compute and can be used in conjunction with Kruskal-Wallis Test to enhance and clarify results (Newsom, 2006). For example, Kruskal-Wallis Test results would confirm the significant difference in adopted VLSs between four groups. Then, to identify where the overall difference derived, post-hoc comparisons were planned to find out where the actual differences are between each group. Due to the conservative nature, Bonferroni corrections are criticised for a risk of Type l errors (Olejnik et al., 1997). For this purpose, it is important to check if results are consistent with theory and past research (Newsom, 2006).

3.4.2.1.6 Thematic analysis of interview transcripts

All audio-recordings of the interview were transcribed in a simple orthographic manner. The qualitative analysis program, NVivo11, was used to facilitate the thematic analysis of the interview data. The program was used as a tool to support the process of coding themes and categorisations rather than driving the analysis. It should be noted that NVivo is not meant to do any analysis by itself automatically; “rather, its data management and querying capacity support you to carry out your analysis by removing the limitations imposed by paper processing and human memory” (Bazeley, 2013, p. 18).

Preparation for analysis began at the initial stages of this research project to carry out a systematic thematic analysis. For example, from the time of its conception during the pilot stage, steps were taken to facilitate interpretation and explanation of the questions under research. Though interviews were semi-structured with open-ended questions, themes were laid out by data generated in the pilot study which fulfilled the need of prior planning, managing and preparing data for analysis as suggested by Bazeley (2013). Combined deductive and inductive approaches were applied in coding pre-defined themes and identifying the emerged themes.

Ten parent nodes (for main themes) and forty-eight child nodes (for sub-themes) were developed while analysing the actual data by following both the inductive and deductive approaches. The ten parent-nodes were: 1= meta-cognitive regulation, parent-node 2= guessing strategies, parent-node 3= dictionary strategies, parent-node 4= note-taking strategies, parent-node 5= memory strategies, parent-node 6= encoding strategies, parent-node 7= activation strategies, parent-node 8= exposure to English media strategies, parent-node 9= exposure of English press, parent-node 10= social interaction. Each parent-node and child-node is linked with the coding scheme for interview data, and details on developed main and sub-themes will be explained in Chapter 5 (see Section 5.3.2).

The findings from semi-structured interviews response-data were abstracted by employing figures, tables and narratives to enrich interpretation as suggested by the experts (Baskerville and Pentland, 1994; Bazeley, 2013). The numerical

patterns of interview data-sets were computed by using matrix coding query in NVivo 11. This matrix calculated the detail of participants adopted VLSs. In the description of results in Chapter 5, findings are presented in the Section 5.3.2 by exemplifying the actual comments made by interviewees and further critically discussed in 5.4 in the light of related research and theories in the field of second language learning.

3.5 The ethical considerations

This study followed the research ethics guidelines by the University of Bedfordshire and the guidelines for applied linguistics research by the British Association for Applied Linguistics (BAAL). The following points were addressed to satisfy the University of Bedfordshire research ethics guidelines:

1) Ethical approval was obtained by the Research Institute Ethics Committee before conducting any data collection;

2) It was ensured that research would be carried out in a rigorous and professional manner to ensure integrity;

3) Proper acknowledgements were given via Harvard referencing system regarding the origin of data and ideas;

4) Data handling were made effective by record keeping, proper storage with regards to confidentiality and data protection; and

5) Appropriate approval was sought before conducting the data collection in the Pakistani university.

This study adhered to the BAAL guiding principles during data collection and data analysis. The rights, interests, sensitivities, and privacy of the participants were highly respected regarding their identity, age, gender, culture and religion.

All participants were adult undergraduate students at or over the age of 18. First, the research consent was obtained from the Institute where this study was conducted, and then informants for voluntary participation were requested via their course managers and teachers. Informed consent forms with an information sheet were provided to the faculty and students before conducting this study, and they were sought for their written consent as recommended (Cohen, Manion and Morrison, 2000; Creswell, 2003; Johnson and Christenson, 2004).

Informants were explained about the aim and rationale of the study, details on their participation and the significance of this study to advance English language learning in the Pakistani ESL context. They were informed how much time it would take and how their identities would remain confidential and anonymous. They were also given the right to withdraw from the research if they wished at any time of their participation (Browns, 2001; Punch, 2005).

Chapter 4: Results of VLS Questionnaire and Vocabulary Tests

4.1 Introduction

This chapter describes the results of quantitative analyses on vocabulary learning strategies (VLSs) questionnaire and two productive vocabulary tests. Firstly, results from the VLS questionnaire (Section 4.2) including factor analysis (Section 4.2.1), item analysis and descriptive statistics (Section 4.2.2) are reported in detail to address RQ1.

Secondly, findings from the Productive Vocabulary Levels Test (section 4.3) and the Productive Course Vocabulary Test (section 4.4) are presented. The results of the reliability analysis (Section 4.3.1) and the descriptive analysis (Section 4.3.2) of the Productive Vocabulary Levels Test that measured the learners' productive knowledge in general vocabulary are presented. The results of the Wilcoxon Signed Rank Test are reported in Section 4.3.3 to assess the learners' progress in general vocabulary. The results of the inter-rater reliability (Section 4.4.1) and the descriptive analysis (4.4.2) of the Productive Course Vocabulary Test that measured the learners' productive knowledge in course-related vocabulary are then reported. The results of Wilcoxon Signed Rank Test (Section 4.4.3) regarding progress in course-related vocabulary are reported in Section 4.4.3.

Thirdly, the results of multiple regression analysis (section 4.5) are shown to address RQ2. The use of curricular and extra-curricular VLSs is then compared across four different progress groups of general vocabulary and course-related vocabulary. To this aim, Section 4.6 presents Kruskal-Wallis tests and Post-hoc comparisons. The findings of questionnaire and vocabulary tests are summarised in Section 4.7.

4.2 Vocabulary learning strategies (VLSs) questionnaire

The findings of VLS questionnaire in factor analysis, item analysis and descriptive analysis are presented in this section.

4.2.1 Factor Analysis of vocabulary learning strategies (VLSs) questionnaire

The principal axis factor analysis with the Promax rotation procedure was performed. As described in see Section 3.4.2.1.3, the required assumptions were assessed to check if the VLS questionnaire data was suitable for factor analysis, and its suitability has been confirmed. Kaiser-Meyer-Olkin (KMO) test and Bartlett's test of sphericity were computed on the data-set of the VLS questionnaire for factor analysis. The results showed that data-set on VLS questionnaire was appropriate for factor analysis. Eigenvalues of the factors (i.e., factors above or below the value of 1) and scree plot (i.e. the factors on the left of the point of the curve where there is a sudden change of steepness are significant) were accessed for initial factor solutions. The possible factor structures were assessed to determine the final underlying structure of curricular and extra-curricular VLSs. Five factors had eigenvalues over Kaiser's criterion of 1 and combination explained 78.15% of the variance (see Table 4.1). The scree plot showed inflexions that would justify retaining 2 factors. The statistical criteria were combined with the conceptual knowledge of VLSs. As will be detailed below, solutions with 10 to 2 factors were computed and examined until the two criteria, 1) the overall model data fit is acceptable 2) the meaning of each factor can be established, was achieved. The rotated solution with 2-factor

revealed the presence of simple structure as compared to other trial factor solutions.

Trials with ten to two-factor solutions were conducted. The six-, five-, four- and three-factor solution were rejected because it might have generated too many factors in a sense that only factor loading was in two first factors and the other factors had either cross-loading with a lot of empty loadings, and, the extracted factors were not making any sense when they were attempted to be interpreted based on previous literature. As far as the two-factor solution was concerned, it showed a clearer distinction between the factors (see Table 4.2 below). As described in Section 3.4.2.1.1-c, the examined VLSs contained 105 items in total, i.e.,72 items of curricular VLSs and 33 items of extra-curricular VLSs. The final two-factor solution in the study was exactly in line with this categorisation of VLSs. For example, the same 72 items were loaded on Factor 1 (which was named as curricular vocabulary learning strategies) and the same 33 items loaded on Factor 2 (which was named as extra-curricular vocabulary learning strategies).

The final rotated two-factor pattern, eigenvalues, and inter-factor correlation matrix are presented in Table 4.2 below. The two-factor solution explained a total of 74.23% of the cumulative with Factor 1 contributing 65.84% and Factor 2 74.23%. As shown below, in Table 4.2, Factor 1 includes 72 items, consisted sixteen curricular VLSs. This group was named as curricular VLSs as these VLSs tend to be used in ESL classrooms in academic contexts identified by the previous studies (Gu and Johnson, 1996, Schmitt, 1997). Factor 2 contained 33

items, containing eleven extra-curricular VLSs which are often linked with out of classroom informal learning. Factor 2 was named as extra-curricular VLSs. The pattern matrix and the inter-factor correlations for the curricular and extra-curricular VLSs construct are presented in Table 4.2 below.

Table 4.1 Eigenvalues and Scree plot

Factor	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	69.13	65.839	65.839
2	8.60	8.186	74.025
3	1.98	1.881	75.906
4	1.35	1.283	77.189
5	1.21	1.154	78.344
6	1.098	1.046	79.390

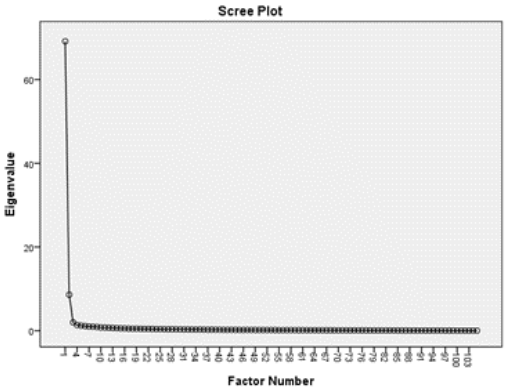


Table 4.2 Pattern matrix for the VLS questionnaire: two-factor solution

No	Items	F 1 (CVLS)	F 2 (ECVLS)
2.2	When I want to confirm my guess about a word, I look it up its meaning in the dictionary.	.945	
2.4	I look up the meaning of new words that are crucial to an understanding of the sentence or paragraph in which it appears.	.941	
5.6	I look for any definitions or paraphrases in the passage that support my guess about the meaning of a word.	.938	
5.4	I check my guessed meaning against the wider context to see if it fits in.	.926	
2.3	When not knowing a word prevents me from understanding a whole sentence or even a whole paragraph, I look it up its meaning in the dictionary.	.918	
2.5	I pay attention to the examples of use when I look up a word in a dictionary.	.912	
2.10	When I get interested in another new word in the definitions of the word I look up, I look up this word in the dictionary as well.	.904	
5.5	I look for other words or expressions in the passage that support my guess about the meaning of a new word.	.902	
6.1	I try to read as much as possible so that I can make use of the words I tried to remember.	.897	
2.8	When looking up a word in the dictionary, I read sample sentences illustrating the various meaning of two or more words.	.895	
4.6	I associate a new word with a known English word that looks similar.	.889	
2.1	When I see an unfamiliar word, again and again, I look it up its meaning in the dictionary.	.888	
4.13	When I meet a new word, I search in my memory and see if I have any synonyms and antonyms in my vocabulary stock.	.887	
5.1	I use alternative cues and try again if I fail to guess the meaning of a word.	.885	
2.6	When I want to know more about a word that I already have some knowledge of, I look it up in the dictionary.	.884	
7.1	I make a note of the meaning of a new word when I think the word I am looking up is commonly used.	.882	

2.9	I make a note when I want to help myself distinguish between the meanings of two or more words.	.881
2.7	When I do not know the usage of a word I already have some knowledge of, I look it up in the dictionary.	.877
4.5	I visualise the new word to help me remember it.	.870
5.7	I make use of the grammatical structure of a sentence when guessing the meaning of a new word.	.866
7.2	I make a note when I think the word I am looking up is relevant to my personal interest.	.864
5.8	I look for any examples provided in the context when guessing the meaning of a new word.	.861
4.3	I create a mental image of the new word to help me remember it.	.857
4.14	I group words into categories (e.g., animals, utensils, vegetables, etc).	.855
4.18	I learn words better when I put them in contexts (e.g., phrases, sentences, etc.).	.853
5.3	I make use of my common sense and knowledge of the world when guessing the meaning of a word.	.849
4.15	When I try to remember a word, I remember the sentence in which the word is used.	.839
6.5	I try to use newly learned words in imaginary situations in my mind.	.836
2.11	I try to integrate dictionary definitions of the new word into the context where the unknown word was met and arrive at a contextual meaning.	.835
3.8	When looking up a word in the dictionary, I read sample sentences illustrating the various meaning of two or more words.	.834
4.10	I associate a new word with a known English word that sounds similar.	.830
4.8	I remember together words that I sound similar.	.826
6.3	I try to use the newly learned words as much as possible in speech and writing.	.825
3.3	I go through my vocabulary lists several times until I am sure that I do not have any words on that list that I still do not understand.	.824
4.9	I remember together words that are spelt similarly.	.813
1.6	I make a note of words that seem important to me.	.810
3.5	I make regular and structured reviews of new words I have memorised.	.807
6.2	I make up my own sentences using the words I just learned.	.804
6.4	I try to use newly learned words in real situations.	.804
3.7	When I try to remember a word, I write it repeatedly.	.800
5.10	I check my guessed meaning against the immediate context to see if it fits in.	.799
5.9	I make use of the part of speech of a new word when guessing its meaning.	.799
3.9	I write both the new words and their Urdu equivalents repeatedly in order to remember them.	.794
4.16	I deliberately read books in my area of interest so that I can find out and remember the special terminology that I know in Urdu.	.790
5.2	I make a use of the logical development in the context (e.g., cause and effect) when guessing the meaning of a word.	.783
4.1	I remember a group of new words that share a similar art in spelling.	.772
4.2	I act out a word to remember it better.	.759
5.11	I analyse the word structure (prefix, root, and suffix) when guessing the meaning of a word.	.752
4.17	I remember the new word together with the context where the new word occurs.	.751
4.12	I try to create semantic networks in my mind and remember words in meaningful groups.	.746
4.11	I deliberately study word-formation rules in order to remember more words.	.730
1.5	I know what cues I should use in guessing the meaning of a particular word.	.729
4.7	I remember the spelling of a new word by breaking it into several visual parts.	.729
7.4	I write down the English synonyms or explanations of the word I look up.	.723
7.6	I make a note when I see a useful expression or phrase.	.721
3.2	I keep vocabulary lists of new words that I make.	.719
3.1	I make vocabulary lists of new words that I meet.	.712
4.4	I associate one or more letters in a word with the word meaning to help me remember it.	.712
3.6	When I try to remember a word, I repeat it aloud to myself.	.704
1.8	I would not learn what my English teacher does not tell us to learn.	.701
1.10	I know which words are important for me to learn.	.701
7.3	I put synonyms and antonyms together in my notebook.	.693
7.8	I note down examples showing usage of the word I look up.	.677
7.5	I write down both the Urdu equivalent and the English synonyms of the word I look up.	.671
1.1	I know which words are important for me to learn.	.668
1.4	When I meet a new word or phrase, I have a clear sense of whether I need to remember it.	.652
7.7	I take down (make a note of) the collocations of the word I look up.	.651
1.7	Besides textbooks, I look for other readings that fall under my interest.	.650
1.3	I look up words that I am interested in.	.633
1.2	I have a sense of which word I can guess and which word I cannot.	.627

3.4	I make vocabulary cards and take them with me where ever I go.	.553	
1.9	I only focus on things that are directly related to examinations.	.540	
9.9iii	I listen to news on the radio in English to learn English vocabulary.		.941
9.10iii	I use video conferencing to speak to my friends who are native speakers of English to learn English vocabulary.		.939
9.7iii	I watch English news daily to learn English vocabulary.		.938
9.7i	I watch English news daily for pleasure.		.928
9.6i	I use tele-text or watch the programme with English for pleasure.		.926
9.9i	I listen to news on the radio in English for pleasure.		.923
9.6iii	I use tele-text or watch the programme with English to learn English vocabulary.		.915
9.7ii	I watch English news daily to learn English vocabulary.		.911
9.5iii	I listen to English music to learn English vocabulary.		.911
9.8iii	I watch matches and listen to the commentary in English to learn English vocabulary.		.906
9.5ii	I listen to English music to learn English.		.905
9.4iii	I watch TV programmes broadcast in to learn English vocabulary.		.900
9.11iii	I read English Newspaper to learn English Vocabulary.		.899
9.10ii	I use video conferencing to speak to my friends who are native speakers of English to learn English.		.894
9.3iii	I watch English movies and plays to learn English vocabulary.		.885
9.8ii	I watch matches and listen to the commentary in English to learn English.		.880
9.9ii	I listen to news on the radio in English to learn English.		.875
9.11ii	I attend and participate in out-of-class events where the English language is used as a mode of communication to learn English.		.871
9.4i	I watch the TV programmes broadcast in for pleasure.		.871
9.10i	I use video conferencing to speak to my friends who are native speakers of English for pleasure.		.870
9.11i	I attend and participate in out-of-class events where the English language is used as a mode of communication for pleasure.		.855
9.4ii	I watch TV programmes broadcast in to learn English.		.855
9.6ii	I use tele-text or watch the programme with English to learn English.		.852
9.1i	I read English magazines for pleasure.		.851
9.8i	I watch matches and listen to the commentary in English for pleasure.		.830
9.2i	I read English Newspaper for pleasure.		.815
9.2ii	I read English Newspaper to learn English.		.804
9.3ii	I watch English movies and plays to learn English.		.801
9.2iii	I read English Newspaper to learn English Vocabulary.		.795
9.1iii	I read English magazines to learn English Vocabulary.		.789
9.5i	I listen to English music for pleasure.		.784
9.3i	I watch English movies and plays for pleasure.		.774
9.1ii	I read English magazines to learn English.		.751
N		72	33
Eigenvalues		69.13	8.60
Cumulative %		65.84	74.23
Interfactor correlation matrix			
Factor 1 (Curricular VLSs)		1.000	
Factor 2 (Extra-curricular VLSs)		0.716	1.000

4.2.2 The internal reliability and the descriptive statistics of the VLS questionnaire

In this section, adopted curricular and extra-curricular VLSs by participants are analysed to address RQ1. Firstly, item analysis (Section 4.2.2.1) to check the internal consistency and descriptive statistics (Section 4.2.2.2) are presented in the two categories of VLSs defined by the above factor analysis. When the VLS questionnaire was constructed, the researcher originally had two major components in mind: 1) curricular VLSs and 2) extra-curricular VLSs, which were

then confirmed as two categories in the factor analysis. Each of the two VLSs categories was also designed with several sub-categories based on the previous research (e.g., Alan, 1987; Peter 1987; Gu and Johnson, 1996; Schmitt, 1997; Harris and Snow, 2004; Zhang and Li, 2011). As well as investigating how the two macro-VLSs (e.g., curricular and extra-curricular VLSs) are used by the study participants, this study also aims to examine how micro-VLSs within the two macro-VLSs are used. In order to justify the use of micro-VLSs in the current analysis, it is necessary to carry out item analysis on each micro-VLS to check the internal consistency of each sub-category of VLSs and descriptive statistics of both macro- and micro-VLSs. The item analysis of VLS questionnaire part one (Section 4.2.2.3, Section 4.2.2.4) and part two (Section 4.2.2.5, Section 4.2.2.6) are presented below.

4.2.2.1 Item analysis of two macro-VLSs generated by factor analysis

To check the internal consistency of the curricular VLSs (Factor 1) and extra-curricular VLSs (Factor 2), a Cronbach Alpha coefficient was calculated. Both of the factors had an excellent internal consistency with a Cronbach Alpha coefficient reported of 0.994 for curricular VLSs and 0.992 for extra-curricular VLSs as seen in Table 4.3 below.

Table 4.3 Item analysis of two macro-VLSs

VLS questionnaire	N of items	Cronbach's alpha
Curricular VLSs	72	0.994
Extra-curricular VLSs	33	0.992

4.2.2.2 Descriptive statistics of two macro-VLSs generated by factor analysis

Table 4.4 below shows the descriptive statistics of the 72-item of curricular VLSs (Factor 1) and 33-item of extra-curricular VLSs (Factor 2). There was no missing or invalid data, and the descriptive statistics were performed with valid data of 578 participants.

As shown Table 4.4 below, the response results of VLS questionnaire reflected that the participants of this study, on average, used both curricular (M=2.77, SD=1.21) and extra-curricular VLSs (M=2.62, SD=1.50) to the similar degrees, while curricular VLSs seemed to be used slightly more frequently. Since the points in the Likert scale used in the VLS questionnaire were: 1=*Never*, 2=*Seldom*, 3=Sometimes, 4=*Often*, 5=*Always*, the results indicate that they used both types of strategies on the average of *Seldom to Sometimes* during the past one year, and the average use of curricular VLSs was closer to *Sometimes* than that of extra-curricular VLSs.

Negative skewness value of curricular VLSs (-.156) indicates a clustering of responses at the high end (right-hand side of a graph). Positive skewness value of extra-curricular VLSs (.331) indicates that their responses scores clustered to the left at the low values. As shown in Table 4.4 below, Kurtosis values of both curricular and extra-curricular VLSs are below 0 showing a distribution that is relatively flat (too many cases in the extremes). 5% Trimmed Mean statistic was computed and compared with the original mean. Both of these two means values were not very different, which indicates that extreme responses were not having a strong influence on the mean of curricular VLSs and extra-curricular

VLSs. Normality of both factors was also checked with the one-sample Kolmogorov-Smirnov test, the results of this test reflect that the data was not normally distributed (P<0.001).

Despite the non-normality, the questionnaire data was still considered suitable for further analysis. As pointed out by Tabachnick and Fidell (2001) (cited in Pallant, 2005, p.52) "with reasonably large samples, skewness will not 'make a substantive difference in the analysis' (Tabachnick and Fidell, 2001, p. 74). Kurtosis can result in an underestimate of the variance, but this risk is also reduced with a large sample (200+ cases: see Tabachnick & Fidell, 2001, p. 75)".

Table 4.4 Descriptive statistics of the curricular VLSs (factor-1) and extra-curricular VLSs (factor-2)

	Curricular VLSs	Extra-curricular VLSs
N valid	578	578
N missing	0	0
Mean	2.77	2.62
5% Trimmed mean	2.74	2.58
Std. deviation	1.21	1.50
Skewness	-.156	.331
Kurtosis	-1.03	-1.44
Kolmogorov-Smirnov test	0.000	0.000

4.2.2.3 Item analysis of micro-curricular VLS

As mentioned earlier, it was considered more fruitful to look into the participants' use of curricular VLSs at a micro level as well as their use of curricular VLSs at a macro level. To enable this investigation, it was first of all necessary to confirm the micro-VLS categories established based on the literature. To this aim, the reliability of each micro VLS categories (based on the previous study, e.g., Gu and Johnson, 1996) was examined by calculating Cronbach's alpha. Item-total correlations for each item were obtained and checked if all the items attained the values above 0.25. In the last column of

Table 4.5, labelled Corrected Item-Total Correlation, all the items valued above 0.25 which showed a correlation between the questionnaire items. They were all over 0.70, indicating that all items under each category measured a similar construct. Questionnaire data was also assessed to ensure that high values of Cronbach Alpha reflect a high consistency and not redundancy (see Section 3.4.2.1.1-c).

The results of reliability analysis, as presented in Table 4.5 below, revealed that all micro-curricular VLSs categories achieved an alpha of above 0.90 ranging from 0.928 to 0.968. An Alpha value above 0.80 of a questionnaire reflects a high reliability and item consistency (Bowling, 1997; Kline, 1999). Thus, it was considered that questionnaire items grouped in each micro-curricular VLS category, which was adopted from the literature to identify the adopted curricular VLSs by the participants of the study, had a high internal consistency.

Table 4.5 Reliability analysis of the main study VLS questionnaire

No	VLSQ item	Mean	SD	Item-total correlation
Meta-cognitive strategies				
Selective attention (Cronbach's Alpha = .959)				
1.1	I know which words are important for me to learn.	3.01	1.52	.880
1.2	I have a sense of which word I can guess and which word I cannot.	2.99	1.53	.887
1.3	I look up words that I am interested in.	3.05	1.58	.888
1.4	When I meet a new word or phrase, I have a clear sense of whether I need to remember it.	2.99	1.54	.895
1.5	I know what cues I should use in guessing the meaning of a particular word.	2.82	1.43	.855
1.6	I make a note of words that seem important to me.	2.89	1.54	.811
Self-Initiation (Cronbach's Alpha = .933)				
1.7	Besides textbooks, I look for other readings that fall under my interest.	2.80	1.60	.750
1.8	I would not learn what my English teacher does not tell us to learn.	2.73	1.64	.875
1.9	I only focus on things that are directly related to examinations.	2.59	1.61	.865
1.10	I would not care much about vocabulary items that my teacher does not explain in class.	2.80	1.67	.878
Dictionary strategies				
Dictionary strategies for comprehension (Cronbach's Alpha = .968)				
2.1	When I see an unfamiliar word, again and again, I look it up its meaning in the dictionary.	2.98	1.48	.885
2.2	When I want to confirm my guess about a word, I look it up its meaning in the dictionary.	2.97	1.46	.930

2.3	When not knowing a word prevents me from understanding a whole sentence or even a whole paragraph, I look it up its meaning in the dictionary.	2.99	1.46	.938
2.4	I look up the meaning of new words that are crucial to an understanding of the sentence or paragraph in which it appears.	3.01	1.46	.925
	Extended dictionary strategies (Cronbach's Alpha = .964)			
2.5	I pay attention to the examples of use when I look up a word in a dictionary.	2.91	1.46	.875
2.6	When I want to know more about a word that I already have some knowledge of, I look it up in the dictionary.	2.79	1.42	.871
2.7	When I don't know the usage of a word I already have some knowledge of, I look it up in the dictionary.	2.82	1.44	.857
2.8	When looking up a word in the dictionary, I read sample sentences illustrating the various meaning of two or more words.	2.85	1.41	.881
2.9	I make a note when I want to help myself distinguish between the meanings of two or more words.	2.80	1.39	.873
2.10	When I get interested in another new word in the definitions of the word I look up, I look up this word in the dictionary as well.	2.87	1.37	.885
2.11	I try to integrate dictionary definitions of the new word into the context where the unknown word was met and arrive at a contextual meaning.	2.77	1.36	.863
	Memory strategies rehearsal			
	Using word lists (Cronbach's Alpha = .948)			
3.1	I make vocabulary lists of new words that I meet.	2.66	1.40	.889
3.2	I keep vocabulary lists of new words that I make.	2.64	1.43	.883
3.3	I go through my vocabulary lists several times until I am sure that I do not have any words on that list that I still do not understand.	2.66	1.38	.874
3.4	I make vocabulary cards and take them with me where ever I go.	2.37	1.35	.814
3.5	I make regular and structured reviews of new words I have memorised.	2.62	1.36	.826
	Oral and visual repetition (Cronbach's Alpha = .928)			
3.6	When I try to remember a word, I repeat it aloud to myself.	2.62	1.41	.803
3.7	When I try to remember a word, I write it repeatedly.	2.69	1.40	.855
3.8	I memorise the spelling of a word letter by letter.	2.71	1.41	.861
3.9	I write both the new words and their Urdu equivalents repeatedly in order to remember them.	2.61	1.40	.811
	Memory strategies encoding			
	Association and imagery (Cronbach's Alpha = .932)			
4.1	I remember a group of new words that share a similar art in spelling.	2.61	1.39	.810
4.2	I act out a word to remember it better.	2.65	1.41	.852
4.3	I create a mental image of the new word to help me remember it.	2.76	1.43	.871
4.4	I associate one or more letters in a word with the word meaning to help me remember it.	2.60	1.42	.825
	Visual encoding (Cronbach's Alpha = .929)			
4.5	I visualise the new word to help me remember it.	2.69	1.42	.849
4.6	I associate a new word with a known English word that looks similar.	2.69	1.36	.899
4.7	I remember the spelling of a new word by breaking it into several visual parts.	2.57	1.38	.816
	Auditory encoding and word structure (Cronbach's Alpha = .937)			
4.8	I remember together words that I sound similar.	2.68	1.41	.876
4.9	I remember together words that are spelt similarly.	2.67	1.40	.874
4.10	I associate a new word with a known English word that sounds similar.	2.62	1.36	.858
	Semantic encoding (Cronbach's Alpha = .929)			
4.11	I deliberately study word-formation rules in order to remember more words.	2.49	1.36	.817
4.12	I try to create semantic networks in my mind and remember words in meaningful groups.	2.54	1.39	.828
4.13	When I meet a new word, I search in my memory and see if I have any synonyms and antonyms in my vocabulary stock.	2.71	1.45	.862
4.14	I group words into categories (e.g., animals, utensils, vegetables, etc).	2.66	1.43	.827
	Contextual encoding (Cronbach's Alpha = .940)			
4.15	When I try to remember a word, I remember the sentence in which the word is used.	2.73	1.45	.844
4.16	I deliberately read books in my area of interest so that I can find out and remember the special terminology that I know in Urdu.	2.63	1.41	.863
4.17	I remember the new word together with the context where the new word occurs.	2.62	1.39	.872
4.18	I learn words better when I put them in contexts (e.g., phrases, sentences, etc.).	2.81	1.47	.854
	Guessing strategies			
	Using background knowledge/wider context (Cronbach's Alpha = .964)			
5.1	I use alternative cues and try again if I fail to guess the meaning of a word.	2.80	1.43	.877
5.2	I make a use of the logical development in the context (e.g., cause and effect) when guessing the meaning of a word.	2.74	1.44	.861
5.3	I make use of my common sense and knowledge of the world when guessing the meaning of a word.	2.85	1.49	.877
5.4	I check my guessed meaning against the wider context to see if it fits in.	2.80	1.36	.891
5.5	I look for other words or expressions in the passage that support my guess about the meaning of a new word.	2.89	1.43	.904
5.6	I look for any definitions or paraphrases in the passage that support my guess about the meaning of a word.	2.93	1.44	.903

Using linguistic cues/immediate context (Cronbach's Alpha = .959)				
5.7	I make use of the grammatical structure of a sentence when guessing the meaning of a new word.	2.87	1.43	.892
5.8	I look for any examples provided in the context when guessing the meaning of a new word.	2.86	1.43	.898
5.9	I make use of the part of speech of a new word when guessing its meaning.	2.75	1.39	.884
5.10	I check my guessed meaning against the immediate context to see if it fits in.	2.82	1.43	.901
5.11	I analyse the word structure (prefix, root, and suffix) when guessing the meaning of a word.	2.70	1.39	.845
Activation strategies (Cronbach's Alpha = .962)				
6.1	I try to read as much as possible so that I can make use of the words I tried to remember.	2.85	1.43	.865
6.2	I make up my own sentences using the words I just learned.	2.84	1.45	.878
6.3	I try to use the newly learned words as much as possible in speech and writing.	2.87	1.46	.918
6.4	I try to use newly learned words in real situations.	2.85	1.46	.906
6.5	I try to use newly learned words in imaginary situations in my mind.	2.84	1.47	.894
Note-Taking strategies				
Meaning-Oriented (Cronbach's Alpha = .951)				
7.1	I make a note of the meaning of a new word when I think the word I am looking up is commonly used.	2.84	1.46	.852
7.2	I make a note when I think the word I am looking up is relevant to my personal interest.	2.87	1.49	.836
7.3	I put synonyms and antonyms together in my notebook.	2.58	1.40	.860
7.4	I write down the English synonyms or explanations of the word I look up.	2.65	1.39	.908
7.5	I write down both the Urdu equivalent and the English synonyms of the word I look up.	2.65	1.41	.868
Usage-Oriented (Cronbach's Alpha = .957)				
7.6	I make a note when I see a useful expression or phrase.	2.76	1.45	.911
7.7	I take down (make a note of) the collocations of the word I look up.	2.66	1.42	.914
7.8	I note down examples showing usage of the word I look up.	2.71	1.46	.899

4.2.2.4 Descriptive statistics of micro-curricular VLSs (categories based on the literature)

Descriptive statistics of questionnaire items on micro-curricular VLSs was obtained to address the Research Question 1. Descriptive statistics were carried out to explore the overall patterns of micro-curricular VLSs used by the participants of this study. Table 4.6 presents descriptive statistics for each micro category of VLSs reported in the VLS questionnaire. The response results of VLS questionnaire reflected that the overall 578 participants of this study, on average, used micro-curricular frequently and the all means are very similar across the 16 micro-curricular VLS Categories. However, the adopted patterns of micro-curricular VLSs seem different once these 578 participants were divided into four groups based on their vocabulary gain (see Section 3.3.1). Since the points in the Likert scale used in the VLS questionnaire were: 1=*Never*, 2=*Seldom*,

3=Sometimes, 4=*Often*, 5=*Always*, the results indicate that they used micro-curricular VLSs on the average of closer to *Sometimes.*

As shown in Table 4.6, the response results of curricular VLS questionnaire items reflected that the participants, on average, used selective-attention (M=2.96, SD=1.39) and self-initiatives (M=2.74, SD=1.49), to the similar degrees, while selective-attention seemed to be used slightly more frequently on the average of *Sometimes*. On the average of *sometime,* dictionary strategies were also used for comprehension (M=2.99, SD=1.40) and to extend vocabulary knowledge (M=2.83, SD=1.28), such as, looking up the meaning of new words that were crucial to understanding the sentence, confirmation of the guessed meaning if it came again and again and looked examples of use in the dictionary. Dictionary strategies for comprehension seemed to be used slightly more frequently as compared to extended dictionary strategies. On the average of *sometimes*, students applied rehearsal memory strategies such as using word lists (M=2.60, SD=1.26) and oral and visual repetition (M=2.66, SD=1.28) such as integration of definitions of unknown words into the context where these were found and making notes to distinguish between the meanings of two words were the most used rehearsal memory strategies. Encoding strategies,i.e., association and imagery (M=2.66, SD=1.29), visual encoding (M=2.66, SD=1.30), auditory encoding and word structure (M=2.66, SD=1.31), semantic encoding (M=2.61, SD=1.28) and contextual encoding (M=2.70, SD=1.32) for example creating a mental image of the new word to remember it were used by learners. The mean of adopted encoding strategies is very similar across the 5 sub-categories, at the

average of *sometimes*. The usage of guessing strategies using background knowledge (M=2.84, SD=1.32) and linguistic cues (M=2.81, SD=1.31) such as looking for any definition in the passage that would support the guess about the meaning of a word and finding expressions in the passage that would support the guess about the meaning of a new word were reported with the average of *sometimes*.

Table 4.6 Patterns of adopted curricular VLSs

Categories	N	Mean	SD
Selective attention	578	2.96	1.39
Self-initiatives	578	2.74	1.49
Dictionary strategies for comprehension	578	2.99	1.40
Extended dictionary strategies	578	2.83	1.28
Using Word List memory strategies rehearsal	578	2.60	1.26
Oral and visual repetition memory strategies rehearsal	578	2.66	1.28
Association and imagery memory strategies encoding	578	2.66	1.29
Visual encoding memory strategies encoding	578	2.66	1.30
Auditory Encoding and word structure memory strategies encoding	578	2.66	1.31
Semantic encoding memory strategies encoding	578	2.61	1.28
Contextual encoding memory strategies encoding	578	2.70	1.32
Using background knowledge wider context (guessing strategies)	578	2.84	1.32
Using linguistic cues and immediate context (guessing strategies)	578	2.81	1.31
Activation strategies	578	2.86	1.36
Meaning-oriented notetaking strategies	578	2.72	1.31
Usage oriented note taking strategies	578	2.72	1.39

The students also used activation strategies (M=2.86, SD=1.365), such as using already learnt vocabulary in oral and written communication and coursework, on the average of *sometimes*. Similarly, the meaning-oriented (M=2.72, SD=1.31) and usage oriented (M=2.72, SD=1.39) note-taking strategies, e.g., making notes when meeting new useful expressions or phrases and noting down examples of usage were also adopted by the participants at the average of *sometimes*.

4.2.2.5 Item analysis of micro-extra-curricular VLSs (categories based on the literature)

Table 4.7 summarised the internal consistency of each of the macro-extra-curricular VLSs. The details of item-total correlation values (reflecting no item with a value below 0.25.) of each micro-extra-curricular VLSs are presented in the last column. The results of the reliability analysis as provided below discovered that all micro-extra-curricular VLS categories achieved a very high internal consistency (alpha of above 0.90, ranging from 0.937 to 0.967).

Table 4.7 Internal consistency of extra-curricular VLS questionnaire

No.	Extra-curricular VLS Questionnaire items with categories	Mean	SD	Item-total correlation
Reading English magazines (Cronbach's Alpha = .947)				
9.1 i	I read English magazines for pleasure.	2.63	1.65	.857
9.1 ii	I read English magazines to learn English.	2.71	1.68	.906
9.1 iii	I read English magazines to learn English Vocabulary.	2.69	1.68	.906
Reading English Newspaper (Cronbach's Alpha = .950)				
9.2 i	I read English Newspaper for pleasure.	2.68	1.67	.863
9.2 ii	I read English Newspaper to learn English.	2.70	1.66	.916
9.2 iii	I read English Newspaper to learn English Vocabulary.	2.69	1.68	.906
Watching English movies and plays (Cronbach's Alpha = .937)				
9.3 i	I watch English movies and plays for pleasure.	2.86	1.72	.852
9.3 ii	I watch English movies and plays to learn English.	2.76	1.72	.884
9.3 iii	I watch English movies and plays to learn English vocabulary.	2.64	1.70	.875
Watching TV programmes (Cronbach's Alpha = .950)				
9.4 i	I watch the TV programmes broadcast for pleasure.	2.73	1.66	.854
9.4 ii	I watch TV programmes broadcast to learn English.	2.71	1.66	.909
9.4iii	I watch TV programmes broadcast to learn English vocabulary.	2.68	1.67	.920
Listening to English music (Cronbach's Alpha = .956)				
9.5 i	I listen to English music for pleasure.	2.80	1.71	.849
9.5 ii	I listen to English music to learn English.	2.61	1.67	.940
9.5 iii	I listen to English music to learn English vocabulary.	2.60	1.67	.930
Watching programme with English tele-text (Cronbach's Alpha = .962)				
9.6 i	I use tele-text or watch the programme with English for pleasure.	2.55	1.64	.899
9.6 ii	I use tele-text or watch the programme with English to learn English.	2.60	1.65	.927
9.6 iii	I use tele-text or watch the programme with English to learn English vocabulary.	2.56	1.65	.931
Watching English news (Cronbach's Alpha = .962)				
9.7 i	I watch English news daily for pleasure.	2.51	1.63	.894
9.7 ii	I watch English news daily to learn English.	2.55	1.65	.925
9.7 iii	I watch English news daily to learn English vocabulary.	2.53	1.65	.939
Watching matches and listening to English commentary (Cronbach's Alpha = .943)				
9.8 i	I watch matches and listen to the commentary in English for pleasure.	2.83	1.74	.825
9.8 ii	I watch matches and listen to the commentary in English to learn English.	2.66	1.69	.914
9.8 iii	I watch matches and listen to the commentary in English to learn English vocabulary.	2.63	1.71	.909

Listening news on radio (Cronbach's Alpha = .967)				
9.9 i	I listen to news on the radio in English for pleasure.	2.36	1.63	.913
9.9 ii	I listen to news on the radio in English to learn English.	2.39	1.65	.930
9.9 iii	I listen to news on the radio in English to learn English vocabulary.	2.34	1.65	.943
Video conferencing with native speakers of English (Cronbach's Alpha = .956)				
9.10 i	I use video conferencing to speak to my friends who are native speakers of English for pleasure.	2.51	1.67	.866
9.10 ii	I use video conferencing to speak to my friends who are native speakers of English to learn English.	2.42	1.64	.928
9.10 iii	I use video conferencing to speak to my friends who are native speakers of English to learn English vocabulary.	2.38	1.64	.928
Out of class events (Cronbach's Alpha = .970)				
9.11 i	I attend and participate in out-of-class events where the English language is used as a mode of communication for pleasure.	2.66	1.69	.910
9.11 ii	I attend and participate in out-of-class events where the English language is used as a mode of communication to learn English.	2.67	1.72	.943
9.11 iii	I attend and participate in out-of-class events where the English language is used as a mode of communication to learn English vocabulary.	2.65	1.73	.951

4.2.2.6 Descriptive statistics of the VLS questionnaire (extra-curricular VLSs: before factor analysis)

The descriptive statistics of the questionnaire part two response was computed to answer research question 1 and is presented in Table 4.8 below.

Table 4.8 Descriptive statistics of extra-curricular VLS questionnaire

Categories	N	Mean	SD
English press/publication			
Reading English Magazines	578	2.68	1.59
Reading English Newspaper	578	2.70	1.60
English media			
Watching English movies and plays	578	2.76	1.62
Watching TV programmes	578	2.71	1.59
Listening to English music	578	2.68	1.62
Watching programme with English tele-text/subtitles	578	2.57	1.60
Watching English News	578	2.54	1.59
Watching matches and listening to English commentary	578	2.71	1.63
Listening news on radio	578	2.37	1.59
Social interaction			
Video conferencing with native speakers of English	578	2.44	1.59
Out of class events where mode of communication is English	578	2.66	1.67

The participants' responses revealed that students were exposed to English press, such as reading English magazines (M=2.68, SD=1.59), and reading English newspaper (M=2.70, SD=1.60). They were also exposed to English media, such as watching English movies (M=2.76, SD=1.62), watching TV programmes (M=2.71, SD=1.59), listening to English music (M=2.68, SD=1.62), watching programmes

with tele-text/subtitles (M=2.57, SD=1.60), watching English News (M=2.54, SD=1.59), watching matches and listening to English commentary (M=2.71, SD=1.63), and listening news on radio (M=2.37, SD=1.59). They were also involved in social interaction such as having interaction with native speakers of English (M=2.44, SD=1.59) and taking part in activities where the mode of communication was English (M=2.66, SD.1.67). The reported responses of students indicate that used the above noted informal strategies, named as extra-curricular VLSs, to learn their vocabulary, to enhance their English knowledge and also for pleasure. The students used these strategies to the similar degrees with the average of *sometimes.* However, reading English newspaper and magazines, watching English movies and TV programmes, listening to English music and sports commentary and participating in out of class activities where the mode of communication was English seemed to be used slightly more frequently than that of the extra-curricular VLSs.

4.3 The Productive Vocabulary Levels Test

As explained in Section 3.3.2.1.1, the 72-item PVLT was conducted twice to examine the learners' lexical gain regarding productive knowledge of general vocabulary during the 52 weeks' period. In this section, the internal reliability statistics are firstly reported followed by descriptive statistics. This section will then present a test of normality and the Wilcoxon Signed Ranks Test to check the vocabulary progression by assessing any difference between the Pre-PVLT and the Post-PVLT test scores.

4.3.1 The internal reliability of the Pre-PVLT and Post-PVLT

Firstly, the internal reliability of the Pre-PVLT and the Post-PVLT test was examined. A Cronbach alpha coefficient was calculated to check the internal consistency of the Productive Vocabulary Levels Test (PVLT). The item-total correlation for each item was obtained to check if any item has a value below 0.25 for the careful revisiting of the specific item. The PVLT test had a good internal consistency with a Cronbach alpha coefficient reported of .953 for the Pre-PVLT test and .963 for the Post-PVLT test as shown in Table 4.9 below.

Table 4.9 Reliability analysis of the PVLT test

Scale PVLT	N of items	Cronbach's alpha
Pre-PVLT	72	0.953
Post-PVLT	72	0.963

Several Pre-PVLT test items (C7, C11, D7, D8, D9, D11, D14, D15, D16, D17, and D18) and the Post-PVLT test items (A1, A2, A3, B1, and D1) reflected corrected item-total correlation values below 0.25 (see Table 4.10 below: columns of Corrected Item-Total Correlation). These items were carefully examined. In Particular, item A1 and B1 in the Post-PVLT test had a negative corrected item-total correlation value and their deletion would make the overall alpha higher. However, these two items were functioning well in the Pre-PVLT (see Table 4.10 below: columns of Cronbach's Alpha if Item Deleted). For the rest of these items, the analysis showed that even if these items from the Pre- and the Post-PVLT test were deleted, it did not positively affect the overall Cronbach alpha coefficient of the PVLT test. It was therefore decided to keep all items in the following analysis. Thus, it might be considered that this PVLT (Pre-and Post-)

test, which was used in this study studies to test general vocabulary knowledge of students, had a reasonable internal consistency.

Table 4.10 Item-total statistics of the Pre- and Post-PVLT test

items	Corrected item-total correlation	Cronbach's alpha if item deleted	Corrected item-total correlation	Cronbach's alpha if item deleted
	Pre-PVLT		Post-PVLT	
A1	0.454	0.953	-0.089	0.964
A2	0.614	0.952	0.044	0.963
A3	0.585	0.952	0.238	0.963
A4	0.602	0.952	0.277	0.963
A5	0.644	0.952	0.375	0.962
A6	0.543	0.952	0.456	0.962
A7	0.544	0.952	0.582	0.962
A8	0.710	0.952	0.625	0.962
A9	0.584	0.952	0.634	0.962
A10	0.634	0.952	0.623	0.962
A11	0.623	0.952	0.578	0.962
A12	0.627	0.952	0.700	0.961
A13	0.668	0.952	0.700	0.961
A14	0.668	0.952	0.646	0.962
A15	0.603	0.952	0.432	0.962
A16	0.522	0.952	0.666	0.962
A17	0.586	0.952	0.586	0.962
A18	0.648	0.952	0.602	0.962
B1	0.531	0.952	0.040	0.964
B2	0.667	0.952	0.457	0.962
B3	0.381	0.953	0.475	0.962
B4	0.583	0.952	0.580	0.962
B5	0.550	0.952	0.613	0.962
B6	0.490	0.953	0.606	0.962
B7	0.377	0.953	0.552	0.962
B8	0.551	0.952	0.647	0.962
B9	0.672	0.952	0.674	0.962
B10	0.630	0.952	0.646	0.962
B11	0.413	0.953	0.613	0.962
B12	0.659	0.952	0.595	0.962
B13	0.298	0.953	0.640	0.962
B14	0.302	0.953	0.307	0.963
B15	0.378	0.953	0.587	0.962
B16	0.256	0.953	0.494	0.962
B17	0.422	0.953	0.646	0.962
B18	0.542	0.952	0.657	0.962
C1	0.594	0.952	0.266	0.963
C2	0.405	0.953	0.472	0.962
C3	0.518	0.953	0.608	0.962
C4	0.380	0.953	0.647	0.962
C5	0.433	0.953	0.536	0.962
C6	0.403	0.953	0.523	0.962
C7	0.181	0.953	0.447	0.962
C8	0.557	0.952	0.708	0.961
C9	0.476	0.953	0.530	0.962
C10	0.288	0.953	0.413	0.962
C11	0.220	0.953	0.493	0.962
C12	0.585	0.952	0.641	0.962
C13	0.475	0.953	0.516	0.962
C14	0.288	0.953	0.500	0.962
C15	0.361	0.953	0.513	0.962
C16	0.557	0.952	0.598	0.962
C17	0.509	0.953	0.656	0.962
C18	0.402	0.953	0.519	0.962
D1	0.529	0.952	0.181	0.963
D2	0.277	0.953	0.477	0.962
D3	0.363	0.953	0.479	0.962
D4	0.278	0.953	0.402	0.962

D5	0.345	0.953	0.489	0.962
D6	0.523	0.953	0.581	0.962
D7	0.228	0.953	0.487	0.962
D8	0.245	0.953	0.436	0.962
D9	0.194	0.953	0.459	0.962
D10	0.254	0.953	0.466	0.962
D11	0.239	0.953	0.459	0.962
D12	0.288	0.953	0.505	0.962
D13	0.266	0.953	0.471	0.962
D14	0.245	0.953	0.462	0.962
D15	0.185	0.953	0.409	0.962
D16	0.141	0.953	0.432	0.962
D17	0.196	0.953	0.386	.962
D18	0.242	0.953	0.443	0.962

4.3.2 Descriptive statistics of the Pre- and Post-PVLT test

Table 4.11 below shows the descriptive statistics of the Pre- and Post-PVLT test. The descriptive statistics were performed with valid data of 578 students, and there was no any missing data.

As shown in Table 4.11 below, out of the maximum score of 72, the mean score of the Pre-PVLT test was 9.75. The positive value of skewness (1.265) indicates that scores clustered to the left at the low values. The positive value of Kurtosis (1.27) shows that the distribution was rather peaked (clustered in the centre), with long thin tails. Out of the maximum score of 72, the mean score of the Post-PVLT test was 28.48. The score distribution was still positively skewed, but the distribution approached more normality (Skewness=0.301), although it was found to be relatively flat (i.e., too many cases in the extremes; Kurtosis=-0.642), (see Figure 4.1 below).

Table 4.11 Descriptive statistics of 72-items of each Pre- and Post-PVLT test

	Pre-PVLT	Post-PVLT
N valid	578	578
N missing	0	0
Mean	9.75	28.48
5% Trimmed mean	8.64	27.81
Skewness	1.265	0.301
Kurtosis	1.27	-0.642
Kolmogorov-Smirnov	0.000	0.000

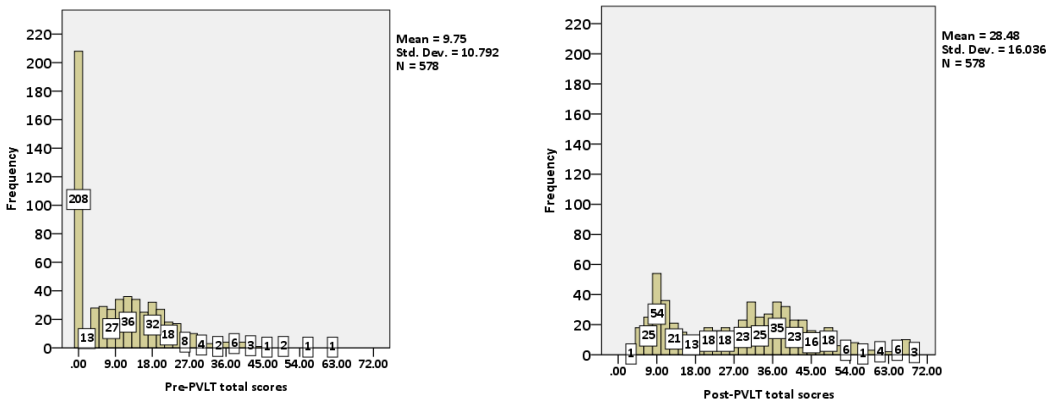


Figure 4.1 Histogram of 72-items Pre- and Post-PVLT test

5% Trimmed Mean statistic is computed (see Table 4.11). The original mean and this new Trimmed Mean of each test were compared. As these two means values were not very different, it showed that extreme scores were not having a strong influence on the average of the PVLT test.

Normality of the Pre-PVLT and Post-PVLT score distribution was tested with the one-sample Kolmogorov-Smirnov test, and the results of this test reflect that the data was not normally distributed (see Table 4.11).

4.3.3 Progress in general vocabulary (PVLT test)

The progress in general vocabulary was calculated from the descriptive statistics of the pre- and post-PVLT test scores to prepare to answer Research Question 2. The Wilcoxon Signed Ranks Test was also performed to assess significance difference between the pre- and post-PVLT test scores.

4.3.3.1 Descriptive statistics to assess vocabulary gain

A total of 578 learners took the Pre-PVLT test in January 2013 and then the same students took the Post-PVLT test in January 2014. The mean (Pre-PVLT: 9.753; Post-PVLT: 28.48), median (Pre-PVLT: 7.00; Post-PVLT: 30.00), mode (Pre-PVLT: 0.00; Post-PVLT: 8.00), standard deviation (Pre-PVLT: 10.80; Post-PVLT: 16.04) values (see Table 4.12 below) of the Pre- and Post-PVLT test depicted a reasonable difference (general vocabulary gain) between the two vocabulary tests.

Table 4.12 Descriptive statistics of the Pre- and Post-PVLT test scores

	Pre-PVLT (72 items)	Post-PVLT (72 items)
N valid	587	578
Mean	9.75	28.48
Median	7.00	30.00
Mode	0.00	8.00
Std. Deviation	10.80	16.04
Minimum	0.00	3.00
Maximum	61.00	69.00

4.3.3.2 Wilcoxon Signed Ranks Test

A total 572 participants out of 578 showed progress in general vocabulary. (see Table 4.13 below).

Table 4.13 Mean and sum of ranks between the Pre- and Post-PVLT test

Ranks		N	Mean rank	Sum of ranks
Post-PVLT total scores – Pre-PVLT total scores	Negative Ranks	6a	16.92	101.50
	Positive Ranks	572b	292.36	167229.50
	Ties	0c		
	Total	578		
a. Post-PVLT total scores < Pre-PVLT total scores				
b. Post-PVLT total scores > Pre-PVLT total scores				
c. Post-PVLT total scores = Pre-PVLT total scores				
Test statistics Wilcoxon Signed Ranks Test	Post-PVLT– Pre-PVLT test scores			
Z	-20.807			
Asymp.Sig. (2-tailed)	0.000			

The remaining 6 participants received even decreased scores as compared to their scores in the Pre-PVLT test. The Z-score is -20.807 and this value is significant at p=0.001. The effect size (calculated by using Cohen's d (1988)) is 1.371, which is a relatively large effect size. The comparisons of descriptive statistics and the Test statistics of Wilcoxon Signed Ranks Test indicate that there was a significant gain in general vocabulary between twelve months' period of the study.

Having confirmed that the participants as a whole had a significant progress in their general vocabulary knowledge, each of them was given an individual progress index, which was the difference between the pre-PVLT and post-PVLT scores. This index per each student was used to assess the impact of learners' use of VLSs on the progress of their general vocabulary (Research Question 2).

4.4 The productive course-related vocabulary test (PCVT)

The 30-item PCVT test (see Section 3.3.2.1.2), assessing course related vocabulary productive knowledge, was conducted to examine the vocabulary gain during the 52 weeks' period. In this section, the inter-rater reliability (IRR) statistics and the descriptive statistics of the PCVT test are firstly reported. The results of Wilcoxon Signed Rank Test between the Pre-PCVT and the Post-PCVT test are then presented.

4.4.1 The Inter-rater reliability (IRR) Pre- and Post-PCVT test

Two types of IRR analysis on the Pre- and Post-PCVT test were conducted using SPSS. As in Table 4.14 below, the overall Cronbach's alpha for both Pre- and Post-PCVT test was quite high, showing .999.

Table 4.14 Inter-rater reliability test with 30-item Pre- and Post-PCVT between the four raters

Scale PCVT	N of raters	Cronbach's alpha
Pre-PCVT	4	0.999
Post-PCVT	4	0.999

Further investigation using Spearman rho (instead of Pearson's as data was not normally distributed) was conducted to examine the correlation between each pair of raters. Results showed a strong positive correlation with all pairs (see Table 4.15 below).

Table 4.15 Spearman rho between the four raters of Pre- and post-PCVT test (N=578 for all cells)

Pre-PCVT	Rater1	Rater2	Rater3	Rater4
Rater1	-	-	-	-
Rater2	0.998	-	-	-
Rater3	0.995	0.994	-	-
Rater4	0.994	0.994	0.999	-
Post-PCVT	Rater1	Rater2	Rater3	Rater4
Rater1	-	-	-	-
Rater2	0.992	-	-	-
Rater3	0.991	0.991	-	-
Rater4	0.990	0.990	0.993	-

Next, Table 4.16 below presents the descriptive statistics of each raters' performance on both the Pre- and Post-PCVT test.

Table 4.16 Descriptive statistics of Pre- and Post-PCVT test in relation of IRR

Statistics	Pre rater1	Pre rater2	Pre rater3	Pre rater4	Post rater1	Post rater2	Post rater3	Post rater4
N Valid	578	578	578	578	578	578	578	578
N Missing	0	0	0	0	0	0	0	0
Mean	3.81	3.75	3.83	3.78	14.93	14.82	14.99	14.94
Median	0.00	0.00	0.00	0.00	12.00	11.00	12.00	12.00
Mode	0.00	0.00	0.00	0.00	2.00	2.00	2.00	2.00
SD	5.53	5.47	5.56	5.52	12.41	12.20	12.42	12.34
Minimum	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum	40.00	40.00	40.00	40.00	52.00	52.00	52.00	52.00

Judging from the descriptive statistics values presented in Table 4.16, it seems justified to say that the four raters seemed to be consistent regarding their marking severity.

Correlation-based analysis cannot detect the extent to which each rater agreed on the same scores. As another type of IRR check, the absolute agreement between each rater was examined. As summarised in Table 4.17, there was an 84.95% of perfect agreement whereas there was 9.34% of the discrepancy of 1 point, 4.15% of the discrepancy of 2 points, 0.86% of the discrepancy of 3 points, 0.34% of the discrepancy of 4 points, 0.17% of the discrepancy of 5 points and 6 points.

Table 4.17 Absolute agreement between the four raters of each Pre- and Post-PCVT test

Level of agreement between the four raters	Pre-PCVT		Post-PCVT	
	Number	Percentage	Number	Percentage
Perfect agreement	491	84.94%	285	49.30%
Discrepancy of 1 point	54	9.34%	150	25.95%
Discrepancy of 2 points	24	4.15%	93	16.08%
Discrepancy of 3 points	5	0.86%	24	4.15%
Discrepancy of 4 points	2	0.34%	13	2.24%
Discrepancy of 5 points	1	0.17%	6	1.03%
Discrepancy of 6 points	1	0.17%	3	0.51%
Discrepancy of 7 points			3	0.51%
Discrepancy of 12 points			1	0.17%
Total Participants	578	100%	578	100%

As far as the Post-PCVT test was concerned, there was a 49.30% of perfect agreement between the four raters, 25.95% of the discrepancy of 1 point, 16.08% of the discrepancy of 2 points, 4.15% of the discrepancy of 3 points. There were 2.24% of the discrepancy of 4 points, 1.03% of the discrepancy of 5 points, and 0.51% of the discrepancy of 6 and 7 points between the four raters on the Post-PCVT tests.

Based on the above noted three checks of inter-rater reliability, it was considered that rating between the four raters was reliable. The PCVT test scores (rated by each rater) were averaged and used for further analysis.

4.4.2 Descriptive statistics of the Pre- and Post-PCVT test

Table 4.18 and Figure 4.2 illustrate the descriptive statistics of the 30-item Pre-PCVT and 30-item Post-PCVT scores. The descriptive statistics were performed with valid data of 578 students.

Out of the maximum score 60, the mean score of Pre-PCVT was 3.79. The positive value of skewness (1.94) indicates that scores clustered to the left at the low values. The positive value of Kurtosis (5.19) show that the distribution was rather peaked (clustered in the centre), with long thin tails.

Out of the maximum score 60, the mean score of Post-PCVT was 14.92. The value of skewness (0.93) and Kurtosis (0.032) indicated that scores were clustered to the left at the low values with relatively flat distribution. 5% Trimmed Mean and the original mean values were not very different indicating that extreme scores were not having a strong influence on the average.

Table 4.18 Descriptive statistics of 30-items Pre- and Post-PCVT test

	Pre-PCVT	Post-PCVT
N valid	578	578
N missing	0	0
Mean	3.79	14.92
5% Trimmed mean	3.12	14.04
Skewness	1.94	0.93
Kurtosis	5.19	0.032
Kolmogorov-Smirnov	0.000	0.000

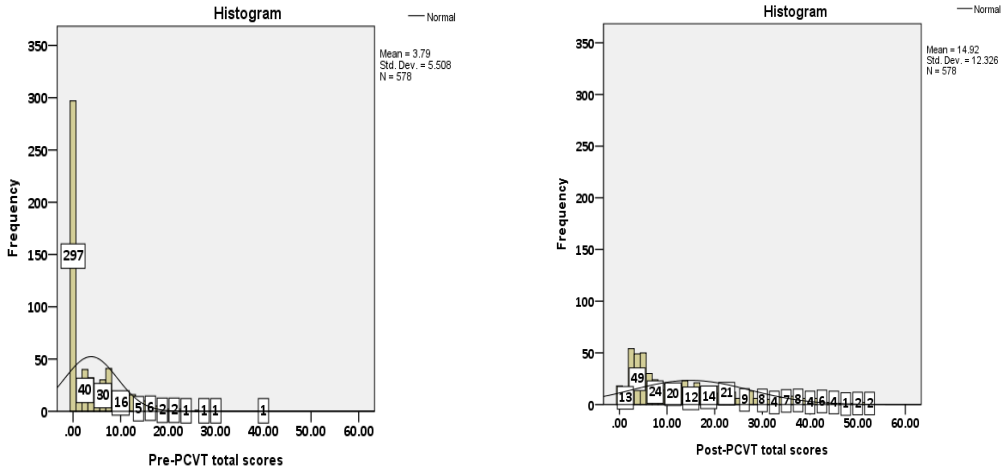


Figure 4.2 Histogram of 30-items Pre- and Post-PCVT test

Normality of the score distributions of the Pre-PCVT and the Post-PCVT test was examined with the one-sample Kolmogorov-Smirnov test, the results of this test reflected that the data was not normally distributed.

4.4.3 Progress in course-related vocabulary (PCVT test)

To prepare to address RQ2, learners' gain in course-related vocabulary was examined firstly by comparing the pre- and post-PCVT test scores descriptively. The Wilcoxon Signed Ranks Test was also performed to check the statistically significant difference, between the pre- and post-PVLT test scores.

4.4.3.1 The descriptive statistics to assess course-related vocabulary gain

A total of 578 participants took the Pre-PCVT test in January 2013 and then the same participants took the Post-PCVT test in January 2014. The mean (Pre-PCVT: 3.79; Post-PCVT: 14.92), median (Pre-PCVT: .00; Post-PCVT: 11.63), mode (Pre-PCVT: 0.00; Post-PCVT: 5.00), and standard deviation (Pre-PCVT: 5.51; Post-PCVT: 12.33) values are presented below (see Table 4.19 below). It showed that

learners made reasonable progress in course-related vocabulary measured by the PCVT test during twelve months' period.

Table 4.19 Descriptive statistics of the Pre- and Post-PCVT test scores

	Pre-PCVT (29 items)	Post-PCVT (29 items)
N valid	587	578
Mean	3.79	14.92
Median	0.00	11.63
Mode	0.00	5.00
Std. Deviation	5.51	12.33
Minimum	0.00	0.00
Maximum	40.00	52.00

4.4.3.2 The Wilcoxon Signed Ranks Test

572 out of 578 participants in total had shown progress in course-related vocabulary, while, 4 participants did not progress and 2 participants received even decreased scores as compared to their scores in the Pre-PCVT test (See Table 4.20 below). The Z-score is -20.74 and this value is significant at p=0.001. The effect size (calculated by using Cohen's d (1988)) is 1.17, which is a relatively large effect size. The comparisons of descriptive statistics and Test statistics of Wilcoxon Signed Ranks Test show that there was a significant gain in course-related vocabulary between twelve months' period of the study.

Table 4.20 Mean and sum of ranks between Pre- and Post-PCVT test

Ranks		N	Mean rank	Sum of ranks
Post-PCVT total scores – Pre- PCVT total scores	Negative Ranks	2a	35.25	70.50
	Positive Ranks	572b	288.38	164954.50
	Ties	4c		
	Total	578		
a. Post- PCVT total scores < Pre-PCVT total scores				
b. Post-PCVT total scores > Pre-PCVT total scores				
c. Post-PCVT total scores = Pre-PCVT total scores				
Test statistics Wilcoxon Signed Ranks Test	Post-PCVT– Pre-PCVT test scores			
Z	-20.74			
Asymp.Sig. (2-tailed)	0.000			

Like the progress measured by two PVLT tests, the progress on the course-related vocabulary for each student was calculated by subtracting their Pre-PCVT scores from their Post-PCVT scores. Each student, therefore, had an individual progress index for the course-related vocabulary, which was used to prepare for addressing Research Question 2 in the multiple regression analysis below.

4.5 Impact of vocabulary learning strategies on vocabulary gain

The multiple regression analysis was conducted to address Research Question 2. As mentioned earlier (Section 3.4.2.1.4), the standard multiple regression method was selected from the three major analytic methods in multiple regression analysis due to its suitability and appropriateness to be used in this study. Six sets of multiple regression analysis were computed with the following independent and dependent variables presented in the Table 4.21.

As noted in Section 4.2.1, after factor analysis, two obvious factors were generated: 1) Macro-curricular VLSs 2) Macro-extra-curricular VLSs. The first set of multiple regression analysis will examine the impact of these macro-curricular and extra-curricular VLSs on general vocabulary gain to explore the best positive predictor in general vocabulary progress during the twelve months' period. The second set will investigate the impact of these macro-curricular and extra-curricular VLSs on course-related vocabulary gain during the twelve months' period.

Table 4.21 Independent and dependent variables used in six sets of multiple regression analysis

Six sets of multiple regression analysis	**Independent variables**	**Dependent variables**
1. To examine the impact of macro-curricular and macro-extra-curricular VLSs on general vocabulary gain	Based on generated two factors: - Macro-Curricular VLSs - Macro-extra-curricular VLSs	Progress in PVLT (general vocabulary gain)
2. To examine the impact of macro-curricular and macro-extra-curricular VLSs on course-related vocabulary gain	Based on generated two factors: - Macro-Curricular VLSs - Macro-extra-curricular VLSs	Progress in PCVT (course-related vocabulary gain)
3. To examine the impact of sixteen micro-curricular VLSs on general vocabulary gain	Sixteen micro-curricular VLSs categories based on the literature	Progress in PVLT (general vocabulary gain)
4. To examine the impact of sixteen micro-curricular VLSs on course-related vocabulary gain	Sixteen micro-curricular VLSs categories based on the literature	Progress in PCVT (course-related vocabulary gain)
5. To examine the impact of eleven micro- extra-curricular VLSs on general vocabulary gain	Eleven micro-extra-curricular VLSs categories based the on literature	Progress in PVLT (general vocabulary gain)
6. To examine the impact of eleven micro extra-curricular VLSs on course-related vocabulary gain	Eleven micro-extra-curricular VLSs categories based the on literature	Progress in PCVT (course-related vocabulary gain)

As noted in Section 4.2.2.4, curricular VLSs were divided into sixteen micro categories based on the previous research on vocabulary learning strategies, whereas extra-curricular VLSs had eleven micro categories which were also assembled based on the literature (see Section 4.2.2.5). Having confirmed the internal consistency of items grouped to each micro VLS categories (Section 4.2.2.3), two sets of multiple regression analysis were conducted to explore the relationship between these sixteen micro-curricular VLSs and the learners' progress in general and course-related vocabulary. Two sets of multiple regression analysis were then conducted to explore the relationship between eleven micro-extra-curricular VLSs and the learners' gain in general and course-

related vocabulary. The results of six sets of multiple regression analysis are reported below.

4.5.1 Examination of the impact of macro curricular and extra-curricular VLSs on general vocabulary gain (PVLT)

The first set of multiple regression analysis was conducted on two generated factors to examine their impact on general vocabulary progress. This set of multiple regression analysis first indicates (See Table 4.22 below) how much of the variance in the dependent variable is explained by the model including the two independent variables of this analysis. With multiplication by 100, R-square values show what percentage of the variance is accounted for by the models. The statistical significance of the results is provided in the right column.

Table 4.22 Multiple regression models summaries overall impact (IV: two macro VLSs)

DV	R Square	Sig
General vocabulary gain (PVLT)	0.395	0.000

Table 4.22 shows that the model, with statistical significance, 39.5 % of the variance in (DV: PVLT) general vocabulary gain is explained.

Next Table 4.23 shows the extent to which each of the two predictors contributed to the dependent variable in the model. The values under standardised Beta (Std-Beta) along with its statistical significance are focused as important indicators. The column labelled Beta under Standardised Coefficient describes that which of the variables included in the model contributed to the prediction of the dependent variable. The beta values are inspected because the aim is to compare the unique contribution of each independent variable. For

each of these variables, the value in the column marked Sig is checked to find out if this variable is making a statistically significant unique contribution to the equation. It is assumed that if the Sig. value is less than 0.05, then the variable is making a significant unique contribution to the prediction of the dependent variable, whereas a value greater than 0.05, indicates that the variable is not making a significant unique contribution to the prediction of the dependent variable (Pallant, 2005). Table 4.23 displays both macro curricular and extra-curricular VLS variables significantly predicted PVLT (general vocabulary gain).

Table 4.23 Multiple Regression coefficients (curricular and extra-curricular VLSs) [DV: PVLT (progress in general vocabulary)]

DV	Predictors	Unstandardized coefficients		Standardized coefficients	t	Sig.
PVLT: progress in general vocabulary		B	Std.Er	Beta		
	(Constant)	4.158	0.956		4.350	0.000
	Curricular VLSs	1.555	0.488	0.159	3.188	0.002
	Extra-curricular VLSs	3.920	0.393	0.498	9.967	0.000

The macro group of extra-curricular VLSs (Std.Beta=0.498, p< 0.001) turned out to be the better predictor of the learners' overall general vocabulary gain, whereas the macro category of curricular VLSs (Std.Beta=0.159, p< 0.001) also positively contributed to the learners' progress in general vocabulary gain.

4.5.2 Examination of the impact of macro curricular and extra-curricular VLSs on course-related vocabulary gain (PCVT)

The second set of multiple regression analysis was conducted to test the impact of the two macro categories of curricular and extra-curricular VLSs on the learners' progress in course-related vocabulary gain. This set of multiple regression analysis first indicates (See Table 4.24) how much of the variance in

the dependent variable is explained by the model including the two independent variables of this analysis.

Table 4.24 Multiple regression models summarise overall impact

DV	R Square	Sig
Course-related vocabulary gain (PCVT)	0.240	0.000

Table 4.24 shows that the model, with statistical significance, 24.0 % of the variance in (DV: PCVT) course-related vocabulary gain is explained.

Next Table 4.25 accounts the unique contribution of the two predictors to the dependent variable in the model.

Table 4.25 Multiple Regression coefficients (curricular and extra-curricular VLSs) [DV: PCVT (progress in course-related vocabulary)]

DV	Predictors	Unstandardized coefficients		Standardized coefficients	t	Sig.
PCVT: progress in course-related vocabulary		B	Std.Er	Beta		
	(Constant)	1.611	.847		1.902	.058
	Curricular VLSs	5.261	.432	.682	12.175	.000
	Extra-curricular VLSs	-1.920	.348	-.309	-5.511	.000

Curricular VLSs (Std. Beta=0.682, $p< 0.001$) turned out the better predictor of the overall course-related vocabulary gain. On the other hand, extra-curricular VLSs (Std. Beta= -0.309, $p< 0.001$) emerged as significant but negative predictors of overall course-related vocabulary gain.

The findings of the first and second set of multiple regression analysis explain the impact of micro VLSs on vocabulary gain. Firstly, the macro-extra-curricular VLSs seem to be affected by the general-vocabulary gain during the twelve months of the study. Secondly, the regression model explains the impact of macro-curricular VLSs on the progression of the course-related vocabulary.

4.5.3 Examination of the impact of sixteen micro-curricular VLSs [DV: PVLT (general vocabulary gain)

The third set of multiple regression analysis was conducted to examine the impact of sixteen micro-curricular VLSs on general vocabulary gain. This set of multiple regression analysis first shows (see Table 4.26 below) how much of the variance in the dependent variable is explained by the model including the sixteen independent variables.

Table 4.26 Multiple regression models summaries overall impacts (IV: 16 curricular VLSs)

DV	R Square	Sig
Course-related vocabulary gain (PVLT)	0.363	0.000

Table 4.26 presents the model summaries. With statistical significance, 36.3% of the variance in (DV: PVLT) general vocabulary gain is explained.

Table 4.27 below describes the unique impact of each of the 16 predictors on the dependent variables in the model. It displays the unstandardized regression coefficients, the standardised regression coefficients along with p values. Table 4.27 shows that the use of two of the 16 micro VLSs significantly predicted the learners' progress in PVLT (general vocabulary gain). Self-initiatives (Std. Beta=0.318, $p< 0.001$) followed by selective-attention (Std. Beta=0.275, $p< 0.001$) turned out the best two predictors of overall general vocabulary gain.

Table 4.27 Multiple Regression coefficients (micro-curricular VLSs) [DV: PVLT (progress in general vocabulary)]

DV	Predictors	Unstandardized coefficients		Standardized coefficients	t	Sig.
PVLT: progress in general vocabulary		B	Std.Er	Beta		
	(Constant)	4.608	1.008		4.571	.000
	Selective attention	2.341	.647	.275	3.620	.000
	Self-initiatives	2.524	.514	.318	4.911	.000
	Dictionary strategies for comprehension	-.764	.779	-.091	-.981	.327
	Extended Dictionary strategies	-1.077	1.088	-.117	-.990	.323
	Using word List memory strategies rehearsal	1.257	.740	.134	1.699	.090
	Oral and visual repetition memory strategies rehearsal	-.093	.719	-.010	-.129	.898
	Association and imagery encoding strategies	.745	.764	.081	.975	.330
	Visual encoding, encoding strategies	-.391	.783	-.043	-.499	.618
	Auditory encoding and word structure encoding strategies	-1.207	.769	-.134	-1.570	.117
	Semantic encoding, encoding strategies	-.152	.794	-.017	-.192	.848
	Contextual encoding strategies	-.049	.800	-.005	-.061	.951
	Using background knowledge for wider context guessing strategies	-.626	.984	-.070	-.636	.525
	Using linguistic cues and immediate Context guessing strategies	1.529	.837	.170	1.826	.068
	Activation strategies	-.747	.794	-.086	-.942	.347
	Meaning oriented note-taking strategies	.738	.981	.082	.752	.452
	Usage oriented note-taking strategies	1.110	.724	.130	1.533	.126

4.5.4 Examination of the impact of sixteen micro-curricular VLSs [DV: PCVT (course-related vocabulary gain)

The fourth set of multiple regression analysis was conducted to assess the impact of sixteen micro-curricular VLSs on course-related vocabulary gain (PCVT). First, the explained percentage of variance in the dependent variable by the model

including the 16 of independent variables of this analysis is presented in Table 4.28.

Table 4.28 Multiple Regression models summaries overall impact

DV	R Square	Sig
Course-related vocabulary gain (PCVT)	0.250	.000

Table 4.28 shows the model, in which, with statistical significance, 25.0% of the variance in (DV: PCVT) course-related vocabulary gain is explained.

Next Table 4.29 presents the unique contribution of each of the individual predictors to the dependent variable in the model.

Table 4.29 Multiple Regression coefficients (micro-curricular VLSs) [DV: PCVT (progress in course-related vocabulary)]

DV	Predictors	Unstandardized coefficients		Standardized coefficients	t	Sig.
PCVT: progress in course-related vocabulary		B	Std.Er	Beta		
	(Constant)	1.318	.865		1.524	.128
	Selective attention	1.452	.555	.216	2.617	.009
	Self-initiatives	.130	.441	.021	.295	.768
	Dictionary strategies for comprehension	1.448	.669	.217	2.165	.031
	Extended Dictionary strategies	-.257	.933	-.035	-.275	.783
	Using word List memory strategies rehearsal	-.350	.635	-.047	-.551	.582
	Oral and visual repetition memory strategies rehearsal	.140	.617	.019	.227	.821
	Association and imagery encoding strategies	1.461	.656	.202	2.227	.026
	Visual encoding, encoding strategies	-.207	.672	-.029	-.308	.758
	Auditory encoding and word structure encoding strategies	-.001	.660	.000	-.002	.998
	Semantic encoding, encoding strategies	-1.647	.681	-.226	-2.418	.016
	Contextual encoding strategies	.983	.686	.139	1.432	.153
	Using background knowledge for wider context guessing strategies	.030	.845	.004	.036	.971
	Using linguistic cues and immediate Context guessing strategies	.002	.719	.000	.003	.998
	Activation strategies	.992	.681	.144	1.456	.146
	Meaning oriented note-taking strategies	.460	.842	.065	.547	.585
	Usage oriented note-taking strategies	-1.395	.621	-.207	-2.245	.025

The values under standardised Beta (Std-Beta) along with its statistical significance are presented while reporting the results. Table 4.29 displays that

the use of the 6 out of the 16 micro-curricular VLSs significantly predicted the learners' progress in PCVT test (course-related vocabulary gain).

Selective-attention (Std. Beta=0.216, p= 0.009), dictionary strategies for comprehension (Std. Beta=0.217, p= 0.031), encoding strategy association and imagery (Std. Beta=0.202, p= 0.026), turned out to be the positive predictors of the overall course-related vocabulary gain whereas encoding strategy semantic encoding (Std. Beta=-0.226, p= 0.016) and usage oriented note-taking strategies (Std. Beta=-0.207, p= 0.025), seemed as significant but negative predictors of overall course-related vocabulary gain.

Summing up, there are three main findings in the third and fourth set of multiple regression analysis. First, the impact of meta-cognitive strategies, such as selective attention and self-initiatives were explained on the progress of general vocabulary. Second, the regression model explains the selective attention, dictionary strategy for comprehension, encoding strategy association and imagery on course-related vocabulary gain. Third, semantic encoding and usage oriented note-taking strategy seems to have a negative impact on the overall course-related vocabulary progress.

4.5.5 Examination of the impact of eleven micro-extra-curricular VLSs [DV: PVLT (general vocabulary gain)

The fifth set of multiple regression analysis was then carried out to investigate how much of the variance in the learners' progress in general vocabulary is explained by the model including the 11 micro-extra-curricular VLSs.

Table 4.30 Multiple regression models summaries overall impact

DV	R Square	Sig
General vocabulary gain (PVLT)	0.411	.000

Table 4.30 below shows that the model, with statistical significance, 41.1% of the variance in (DV: PVLT) general vocabulary gain is explained. Next Table 4.31 below explains the unique contribution of each predictor to the dependent variable in this analysis. Table 4.31 shows the use of two out of the 11 micro-extra-curricular VLSs significantly predicted the learner's progress in PVLT (general vocabulary gain). Reading English magazines (Std. Beta=0.223, p= 0.042), and participating in out of class events where the mode of communication is English (Std. Beta=0.289, p< 0.001), turned out to be the two positive predictors of the learners' overall general vocabulary gain.

Table 4.31 Multiple Regression coefficients (micro-extra-curricular VLS) [DV: PVLT (general vocabulary gain]

DV	Predictors	Unstandardized coefficients		Standardized coefficients	t	Sig.
PVLT: progress in general vocabulary		B	Std.Er	Beta		
	(Constant)	5.801	.775		7.484	.000
	Reading English Magazines	1.659	.815	.223	2.034	.042
	Reading English Newspaper	-1.444	.859	-.195	-1.682	.093
	Watching English Movies, Plays	1.637	.839	.224	1.951	.052
	Watching TV Programmes	-.132	.817	-.018	-.161	.872
	Listening to English Music	.897	.693	.122	1.294	.196
	Watching Programme with English Tele-Text	.684	.687	.092	.995	.320
	Watching English News	1.435	.714	.193	2.009	.045
	Watching Matches and Listening to English Commentary	-.500	.671	-.069	-.744	.457
	Listening News on Radio	-.887	.586	-.120	-1.515	.130
	Video Conferencing with Native Speakers of English	-.644	.649	-.086	-.992	.322
	Out of Class Events Where Mode of Communication Is English	2.045	.566	.289	3.615	.000

4.5.6 Examination of the impact of eleven micro-extra-curricular VLSs [DV: PCVT (course-related vocabulary gain)

The sixth set of multiple regression analysis was performed to examine the relationship between the 11 micro-extra-curricular VLSs and the learners' progress in course-related vocabulary gain. Table 4.32 shows how much of the variance in the course-related vocabulary gain is explained by the model including the 11 extra-curricular VLSs as a whole.

Table 4.32 Multiple regression models summaries overall impact

DV	R Square	Sig
course-related vocabulary gain (PCVT)	0.073	.000

Table 4.32 shows the model, in which with statistical significance, 7.3% of the variance in (DV: PVLT) general vocabulary gain is explained. 7.3% indicates a much smaller explanation powers compared to the above-presented sets of multiple regression analysis. Gaur and Gaur (2009) point out that "R. Square is a square of R and gives the proportion of variance in the dependent variables accounted for by the set of IVs chosen for the model. R. Square is used to find out how well the IVs are able to depict the DV. A much lower value (0.10-0.20) of R. Square is acceptable in Social Science research" (p. 109).

Next Table 4.33 below explains the unique contribution of each of the 11 predictors to the dependent variable in the model. Table 4.33 below shows that the use of only one out of the 11 micro-extra-curricular VLSs significantly predicted the learners' progress in PCVT (course-related vocabulary gain).

Table 4.33 Multiple Regression coefficients (micro-extra-curricular VLS) [DV: PCVT (course-related vocabulary gain]

DV	Predictors	Unstandardized coefficients		Standardized coefficients	t	Sig.
PCVT: progress in course-related vocabulary		B	Std.Er	Beta		
	(Constant)	7.377	.769		9.599	.000
	Reading English Magazines	.536	.809	.091	.663	.508
	Reading English Newspaper	-.542	.851	-.093	-.636	.525
	Watching English Movies, Plays	.483	.832	.084	.580	.562
	Watching TV Programmes	.341	.810	.058	.421	.674
	Listening to English Music	.354	.687	.061	.515	.607
	Watching Programme with English Tele-Text	-.575	.682	-.098	-.843	.399
	Watching English News	-.298	.708	-.051	-.421	.674
	Watching Matches and Listening to English Commentary	1.034	.666	.180	1.553	.121
	Listening News on Radio	-.615	.581	-.105	-1.060	.290
	Video Conferencing with Native Speakers of English	-1.100	.643	-.187	-1.711	.088
	Out of Class Events Where Mode of Communication Is English	1.557	.561	.278	2.776	.006

As seen in the Table 4.32, participating in out of class events where the mode of communication is English (Std. Beta=0.278, p= 0.006), turned out the only predictor of overall course vocabulary gain.

The findings of the fifth and sixth set of multiple regression analysis identify the impact of micro-extra-curricular VLSs on vocabulary gain. The micro-extra-curricular VLSs, such as, reading English magazines and participating out of class events where the mode of communication was English seem to have an impact as on the general-vocabulary gain. The regression model explains the impact of out of class events where the mode of communication was English on the progression of the course-related vocabulary.

4.6 Comparisons of the use of two macro VLSs across different vocabulary progress groups

After assessing the impact of VLSs on vocabulary gain, this section will examine the significant differences among the four groups of the students about applied VLSs to explore the patterns of adopted VLSs by the successful and unsuccessful students. First, the descriptive statistics will be computed to identify the adopted VLSs of the four groups of the students. Second, Kruskal-Wallis Test and post-hoc comparisons with Bonferroni corrections to p-values will be performed to detect any significant differences among the four groups of the students about their adopted VLSs.

Table 4.34 Use of VLSs across four vocabulary progress groups

Groups	**Mean (SD)**	**Kruskal-Wallis Test (α=0.05)**	**Post-hoc test with Bonferroni (α=0.05)**
Curricular VLSs			
Top in both N= 331	2.46 (1.34)	x^2 =292.24 df=3 P<0.001	Bottom in both (p<0.001) Top in general (p<0.001) Top in course (p<0.001)
Bottom in both N=164	1.42 (0.90)		Top in both (p<0.001) Top in general (p<0.001) Top in course (p<0.001)
Top in general vocabulary N=295	3.37 (0.86)		Top in both (p= p<0.001) Bottom in both (p<0.001) Top in course (p=1.00)
Top in course vocabulary N=281	3.35 (0.81)		Top in both (p<0.001) Bottom in both (p<0.001) Top in general (p=1.000)
Extra-curricular VLSs			
Top in both N=331	2.36 (1.43)	x^2 =293.87 df=3 P<0.001	Bottom in both (p<0.001) Top in general (p<0.001) Top in course (p<0.001)
Bottom in both N=164	1.34 (0.94)		Top in both (p= p<0.001) Top in general (p<0.001) Top in course (p<0.001)
Top in general vocabulary N=295	3.50 (1.25)		Top in both (p<0.001) Bottom in both (p<0.001) Top in course (p<0.001)
Top in course vocabulary N=281	2.90 (1.28		Top in both (p<0.001) Bottom in both (p<0.001) Top in general (p<0.001)

Table 4.34 shows the descriptive statistics about the adopted VLSs by the four groups of the students indicating that top in both (M=2.46, SD=1.34; M=2.36,

SD=1.43), top in general vocabulary (M=3.37, SD=0.86; M=3.50, SD=1.25) and top in course-vocabulary (M=3.35, SD=0.81; M=2.90, SD=1.28) had higher mean values of adopted VLSs compared to the bottom in both (M=1.42, SD=0.90; M=1.34, SD=0.94) group. Since the points in the Likert scale used in the VLS questionnaire were: 1=*Never*, 2=*Seldom*, 3=*Sometimes*, 4=*Often*, 5=*Always*, the results indicate that the top in both group used both types of strategies on the average of *sometimes.* The bottom in both group used both curricular and extra-curricular VLSs on the average of *Never*. The top in course group used curricular VLSs on the average of *Sometimes* to *Often,* and the average use of extra-curricular VLSs was closer to *sometimes*. The top in general group used both of the curricular and extra-curricular VLSs on the average of *Sometimes* to *Often*, and the average use of extra-curricular was closer to *Often* than that of curricular VLSs.

The inferential statistics was then performed using Kruskal-Wallis tests, followed by post-hoc comparisons with Bonferroni. The Kruskal-Wallis tests identified significant differences among the four groups of participants regarding the number of strategies they used to learn vocabulary (Curricular VLSs $P<0.001$; extra-curricular VLSs $P<0.001$).

The post-hoc test with Bonferroni showed that top in both ($p<0.001$), bottom in both ($p<0.001$) had a significant difference, whereas top in general-vocabulary ($p<0.001$) and top in course-vocabulary ($p<0.001$) groups had no significant difference in adopted curricular VLSs. Adopted patterns of extra-curricular VLSs by all the four groups, (i.e., top in both ($p<0.001$), bottom in both ($p<0.001$), top

in general-vocabulary $p<0.001$) and top in course-vocabulary ($p<0.001$)) were significantly different from each other.

The comparisons of the use of VLSs across different vocabulary progress groups show that students who progressed in both general and course-vocabulary always used curricular and extra-curricular VLSs to learn their vocabulary during the twelve months of the study. On the other hand, students who showed a lexical gain in course vocabulary used curricular VLSs slightly more frequently compared to extra-curricular VLSs. The students who progressed in general vocabulary used extra-curricular VLSs more frequently compared to the other three groups to learn vocabulary. The least successful students seem not to use curricular and extra-curricular VLSs to learn vocabulary.

4.7 Summary of the findings and discussion

This chapter has presented the findings from VLS questionnaire and vocabulary tests. This section summarises the findings, as well as highlighting some findings relevant to the two research questions of the study. These findings will further be elaborated and triangulated in Chapter 5, Section 5.4 with the results of the structured diary reports and interview responses presented in the next chapter.

The VLSs questionnaire items were grouped into two factors through a factor analysis: macro-curricular VLSs and macro-extra-curricular VLSs used by the Pakistani students who were focused in this study. The categorization of the micro-curricular VLSs and micro-extra-curricular VLSs were adopted by the literature to elaborate the findings of the Research Questions. The participants'

progress in general and course-related vocabulary was assessed by the two types of vocabulary tests. The analysis in this section shows that there was significant progress in general and course-related vocabulary during the twelve months' period of the study. The findings of the quantitative data about the research questions are presented below.

4.7.1 The findings of Research Question 1

Since the points in the Likert scale used in the VLS questionnaire were: 1=*Never*, 2=*Seldom*, 3=*Sometimes*, 4=*Often*, 5=*Always*, the results indicate that the macro-curricular VLSs and macro-extra-curricular VLSs were used by the participants to the similar degrees. However, macro-curricular VLSs were used slightly more frequently by the overall 578 participants.

The participants used micro-curricular VLSs, such as guessing strategies, dictionary strategies, note-taking strategies, memory strategies, encoding strategies, activation strategies during the past one year.

Selective attention, dictionary strategies for comprehension were used on the average of *Sometimes,* and the mean of these strategies was the highest compared to the rest of micro-curricular VLSs.

Extended dictionary strategies, guessing strategies using background knowledge and activation strategies were also used on the average of *Sometimes*; however, the average use of these strategies seemed to be used slightly less frequently than the selective attention and comprehension dictionary strategies.

Self-initiatives, meaning-oriented and usage-oriented note-taking strategies were used with the slightly lower mean on the average of *Sometimes.*

Memory strategies and encoding strategies were used on the average of *sometimes*. However, the average use of these strategies was closer to Seldom than that of the rest of micro-curricular VLSs.

The reported responses of students indicate that the participants used the extra-curricular VLSs to the similar degrees with the average of *sometimes* with a slight difference in mean. However, reading English newspaper and magazines, watching English movies and TV programmes, listening to English music and sports commentary and participating in out of class activities where mode of communication was English seemed to be used slightly more frequently than that of the extra-curricular VLSs by the overall 578 students during the twelve months' period of the study.

Firstly, the adopted patterns of VLSs by the overall 578 participants are reported in this section. Participants were divided into four groups on the basis of their vocabulary gain during the twelve months' period. To elaborate the findings of RQ1, the patterns of adopted VLSs of the four groups of students will be reported below. The significant differences were identified among the four groups of participants regarding the number of strategies they used to learn vocabulary.

The comparisons of the use of VLSs across different vocabulary progress groups show that curricular and extra-curricular VLSs were used more frequently by the

students who progressed in both general and course-vocabulary to learn their vocabulary during the twelve months of the study. On the other hand, curricular VLSs slightly were used more frequently compared to extra-curricular VLSs by the students who showed vocabulary gain in course vocabulary. The extra-curricular VLSs were used mostly by the students who progressed in general vocabulary compared to the other three groups. The students, who appear less successful in vocabulary gain, seem not to use curricular and extra-curricular VLSs.

4.7.2 The findings of Research Question 2

To explore the impact of VLSs on learners' vocabulary progress, multiple regression analysis is used. The findings indicated that course-related vocabulary progress was predicted by macro-curricular VLSs and the general vocabulary gain was predicted by macro-extra-curricular VLSs.

Two of the micro-curricular VLSs, such as selective-attention and self-initiatives were explained on the progress of general vocabulary. The selective attention, dictionary strategy for comprehension, encoding strategy association and imagery predicted the course-related vocabulary gain.

The micro-extra-curricular VLSs, such as, reading English magazines and participating out of class events where the mode of communication was English seem to be impacted by the general-vocabulary gain. The progression of the course-related vocabulary was predicted by the out of class events where the mode of communication was English.

Chapter 5: Results of Diary Reports, interviews and discussion

5.1 Introduction

This chapter reports the findings from structured weekly diary reports (diary reports) and semi-structured interviews (interviews). The results of Chapter 4 and this chapter are triangulated and discussed in Chapter 6 in relation to the Research Question 1.

The categorisation of vocabulary learning strategies (VLSs) used to analyse the diary reports is presented in Section 5.2.1. The diary reports response data regarding the adopted patterns of curricular and extra-curricular VLSs are presented and discussed in detail together with some example comments provided in the reports. The sub-sections under Section 5.2.1 include meta-cognitive strategies (5.2.1.1), guessing strategies (5.2.1.2), dictionary strategies (5.2.1.3), note-taking strategies (5.2.1.4), memory strategies (5.2.1.5), activation strategies (5.2.1.6) and extra-curricular VLSs (5.2.1.7).

The chapter then moves on to the results of interviews. The inter-coder reliability between two coders and a coding scheme developed for interview data are presented in Section 5.3.1 and Section 5.3.2. Each theme emerged from the thematic analysis of the interviews is presented, while comparing frequencies of each theme obtained from different vocabulary progress group. Learners' comments are also presented for each theme: meta-cognitive strategies

(5.3.2.1), guessing strategies (5.3.2.2), dictionary strategies (5.3.2.3), note-taking strategies (5.3.2.4), memory strategies (5.3.2.5), activation strategies (5.3.2.6) and extra-curricular VLSs (5.3.2.7). While findings from interview data are discussed, some references to the quantitative findings from the VLS questionnaire and diary reports are made. Finally, this chapter summarises and synthesise both quantitative and qualitative findings of the study in Section 5.4. These findings are then discussed in relation to the two research questions of the study as well as the existing literature reviewed in Chapter 2.

5.2 Structured weekly diary reports (diary reports) for vocabulary learning

In the second phase of data collection, the diary reports for vocabulary learning were collected for four weeks from 120 participants to gain insights related to the two research questions (Section 2.7) of this study. As noted in Chapter 3 (Section 3.3.2.4), diary reports for vocabulary learning involved filling in entries in a questionnaire which was repeated for the four weeks. The response method was based on Schmitt (1997), requiring the learners to make dichotomous choices. The learners responded *yes* if the particular VLS was applied and responded *no* if it was not implemented. The results were compared across four groups of students who progressed in their general and course-related vocabulary to different degrees.

5.2.1 Categories of VLSs used in diary reports for vocabulary learning

Similarly to the VLS questionnaire of this study, the taxonomies of VLSs used in the diary reports were based on the literature review, mainly guided by Gu and Johnson (1996; see Chapter 2, Section 2.3). However, the categories used (see Table 5.1) in the diary reports were slightly broader under the main categories with the greater number of sub-categories, in order to fit the purpose and format of the diary reports.

The six main-categories of curricular VLSs and the three main-categories of extra-curricular VLSs used in the diary reports are presented in Table 5.1.

Table 5.1 Categories of VLSs used in diary reports for vocabulary learning

Main-categories	
	1. Meta-cognitive strategies (selective-attention and self-initiatives about the focused vocabulary)
Curricula VLSs	2. Guessing strategies
	3. Dictionary strategies
	4. Note-taking strategies
	5. Memory and memory strategies encoding
	6 Activation strategies
Extra-curricular VLSs	6 Exposure to English media
	7 Exposure of English press
	8 Social interaction

The main-categories and the sub-categories of VLSs are detailed below together with examples of responses provided in a free comment space in the diary reports. As noted in Chapter 2, Section 2.3, the VLSs are linked with each other, and the categorisation of VLSs may overlap with each other. The categorisation of VLSs in this study is mainly adopted from the literature (e.g., Alan, 1987; Garb and Stoller, 1997; Gu and Johnson, 1996; Harris and Snow, 2004; Peter, 1987; Schmitt, 1997; Zhang and Li, 2011) given its comprehensive coverage of VLSs in relation to both curricular and extra-curricular VLS. The participants in the diary reports were also asked to specify any other strategies that they applied (if any) to learn vocabulary, as well as being asked to elaborate on their responses in a free comments space regarding their adopted VLSs that they ticked in the checklist.

The analysis compared the learners' responses across four progress groups on general and course-related vocabulary: (1) top in both (2) top in course-related vocabulary (3) top in general vocabulary and (4) bottom in both course-related and general vocabulary. The purpose of the analysis was to capture the overall use of VLSs during the four weeks of the diary reports. Therefore, each learner's

responses across the four weeks were collated for the analysis. Microsoft Excel's *count if* (how many students responded *yes* and how many responded *no*) functions were used. Then average and percentage of their responses for the four weeks were calculated.

Using the main categories, presented in Table 5.1, the frequency of learners who responded *yes* and its percentage within each group were compared across the four groups of learners.

5.2.1.1 Meta-cognitive strategies (Main-category 1)

Test scores of PVLT and PCVT indicated that there was a group of learners whose general (PVLT) vocabulary progress scores were above the average but whose course-related vocabulary scores (PCVT) were below the average. Similarly, there was a group of learners who achieved high scores (above the average) in course-related vocabulary (PCVT) but received low scores (below the average) in general vocabulary (PVLT). To explore possible causes for these differential progress levels in different types of vocabulary on the assumption that their strategy use might be affecting their differential progress levels. The participants were asked whether they used VLSs to learn general vocabulary, course-related vocabulary, or both general and course-related vocabulary. As shown in Table 5.2 below, 100% the top in both group reported that they used VLSs to learn both general and course-related vocabulary.

Table 5.2 Selective-attention and self-initiatives about focused vocabulary across four progress groups

Weekly reports	Focused vocabulary	top in both	top in course-vocabulary	Top in general-vocabulary	Bottom in both
N		30	30	30	30
Focused vocabulary of four groups during four weeks of diary reports					
%	Course	100	73.33	16.66	73.33
	General	100	26.67	83.33	26.67

On the other hand, 73.33% of the top in course vocabulary group and the bottom in both group mentioned that they used VLSs to learn only course-related vocabulary, while 83.33% of the top in general group used VLSs to learn only general vocabulary. In the comments box, the top in both reported that they focused both on general and course-related vocabulary and applied VLSs to learn and improve their vocabulary. The bottom in both group specified that they followed English teachers to learn course vocabulary and their main aim was just to pass the English exam. It shows that they were not aware of meta-cognitive strategies and did not apply selective-attention and self-initiatives towards a balanced application of VLSs. Some examples from those students include:

> *I spent a lot of time on learning course and general vocabulary. For this, I follow my course and teachers. In class, I use guessing from context and teacher asked up to underline the guessed words and check their meaning by talking to each other. I note down these words in my notebook and find its definitions and usage from Oxford dictionary. I always memorise these words and revise them regularly. For general vocabulary, I do the same, but I use English newspaper and English movies.* (5\top in both)

> *Follow teacher. Always follow my teacher to learn English vocabulary* (1\bottom in both)

As far as the participants from the top in course group were concerned, they commented that their focus was to learn course-related vocabulary, and some of them reported that they applied VLSs only to learn course-related vocabulary.

They reported that they followed their teachers, syllabus and applied VLSs during English lesson and self-study at home after college. Their use of VLSs for general vocabulary learning seemed to be limited as reported in their comments. The top in general vocabulary group seems to focus both general and course vocabulary. However, they mentioned that they focused course-related vocabulary which was limited to only during their English lessons. They also appear to have applied a limited range of VLSs to learn course-related vocabulary. Their comments include:

> *I learn general English by using English media, but I do not make notes or follow any book for that. I do guessing a lot when reading the newspaper, but I never use a dictionary to confirm my guessing because if I am reading a newspaper or watching TV and I guess unknown word meaning, I cannot get a chance to check it or confirm its meaning, it will interrupt my listening or reading newspaper. (106\top in course)*
>
> *I try to guess meaning in class during the lesson, but it is always limited time. I guess, but instead of confirming it from the dictionary I ask teacher or friends due to saving time. I do not need to prepare notes for course vocabulary because books have everything, I write notes in the margin of books. For both course and general learning of vocabulary, I use memory strategies.* (76\top in general)

It shows that top in both group used VLSs to learn both general and course-related vocabulary. The top in general group used VLSs to learn general vocabulary. The findings of multiple regression analysis (see Section 4.5) indicated the significance of meta-cognitive strategies, self-initiative and selective-attention. The top in both group seemed more aware of meta-cognitive strategies, and they seemed to use them more efficiently. This group used self-initiatives and selective-attention towards a balanced vocabulary learning and used VLSs both for general and course-related vocabulary.

5.2.1.2 First meeting of the unknown words and guessing strategies (Main-category 2)

The participants were asked about their first interaction with unknown new vocabulary items. The results are presented in Table 5.3 below.

Table 5.3 Guessing strategies and first interaction with new words across four progress groups

Weekly reports		top in both	Top in course-vocabulary	top in general-vocabulary	Bottom in both
N		30	30	30	30
Asked teacher/fellow student for meaning					
%	Applied	0.83	0.83	98.33	98.33
	Not applied	99.17	99.17	1.67	1.67
Checked meaning from dictionary straight away					
%	Applied	0.83	2.50	21.67	70.00
	Not applied	99.17	97.50	78.33	30.00
After guessing, record it down for meaning confirmation/notes preparation					
%	Applied	100.00	100.00	98.33	0.00
	Not applied	0.00	0.00	1.67	100.00
Using background knowledge and wider context during the English lesson					
%	Applied	100.00	100.00	14.17	3.33
	Not applied	0.00	0.00	85.83	96.67
Using background knowledge and wider context during out of class self-study					
%	Applied	100.00	100.00	100.00	0.00
	Not applied	0.00	0.00	0.00	100.00
Using linguistic cues and immediate context during English lesson					
%	Applied	100.00	100.00	10.00	3.33.00
	Not applied	0.00	0.00	90.00	96.67
Using linguistic cues and immediate context during out of class self-study					
%	Applied	100.00	98.33	100.00	0.00
	Not applied	0.00	1.67	0.00	100.00

Students were given seven options, and they were allowed to select more than one option if necessary. To understand what strategies were applied by the students on the first interaction with an unknown word, they were asked if they guess the meaning using guessing strategies, if they ask a teacher or fellow students straight away or if they check the meaning straight away from a dictionary instead of using guessing strategies. Students were asked if they used guessing strategies during English lessons and during out of class self-study.

These sub-categories of VLSs may overlap with the main-categories of dictionary strategies and meta-cognitive strategies. However, this subdivision was used since it can explore the use of guessing strategies together with what other strategies to use when they encounter a new word. As such, VLSs are related to each other, and it was not realistic to build clear boundaries between each VLS.

As shown in Table 5.3, 100.00% of the top in both group applied guessing strategies, i.e., guessing the meaning by using cues during English lessons and during out of class self-study instead of obtaining the meaning from others or checking it straight away from the dictionary, and they noted these words down for a later re-visit. 85.83% of the top in general group reported that they did not apply guessing strategies during English lessons and 98.33% asked others for the meaning of unknown words, and 78.33% checked the meaning in the dictionary straight away during English lessons. However, during out of class self-study activities, 100.00% of these participants applied guessing strategies instead of asking others for the meaning or checking it from the dictionary straight away and they also noted these words down for later learning and revision. The top in general group participants reported in their comments (see below) that they focused course-related vocabulary during English lesson and general vocabulary during out of class self-study.

> *I do not do guessing during lesson due to a short time. I make course vocabulary notes by writing on book margin. I never get a chance to guess because of a short time in class and ask the teacher. But while doing my study after school, I do guessing to learn general vocabulary…..* (66\top in general)

> *If I guess in class, I confirm by asking teachers; I do not use a dictionary. I do not guess in class because it is only 60 minutes' short time, I do not make notes for court vocabulary because books got all I need.* (83\top in general)
>
> *In learning general vocabulary from the newspaper, I guess the meaning… To save time, I ask meaning to teacher or fellow student during the English lesson. I make course vocabulary notes by writing in the margin of books.* (75\top in general)

Results shown in Table 5.3 indicate that the top in general group used guessing strategies for general vocabulary learning only. The 100.00% of the top in the course-vocabulary group reported that they applied guessing strategies during English lessons and out of class self-study instead of obtaining meaning from others and checking meaning from dictionary straight away and prepared notes to learn these words in detail. This group commented that they focused only on course-related vocabulary during English lessons and out of class self-study, so they used guessing strategies only to learn course-related English vocabulary. The top in course group commented:

> *Guessed the meaning of the unknown word from its context out of class during self-study while doing homework from the teacher. I do not have time for mentioned activities*. (91\TOP IN COURSE)
>
> *I use this, I do guessing, but I do not get time to check meaning or make notes for this general vocabulary*. (104\top in course)

On the other hand, 96.67% of the bottom in both groups reported that they did not apply guessing strategies at all. They did not guess the meaning of the unknown word from its context during the English lesson and out of class self-study activities to learn English vocabulary. They also reported that they preferred to ask teachers and fellow students the meaning of the unknown word. One of the bottom in both participants also commented that:

> *I ask meaning from my parents if preparing for the test.* (04\bottom in both)

70.00% of them indicated that they checked the meaning from the dictionary straight away if unknown words occurred instead of guessing, and none of them reported that they noted these words down for later learning.

5.2.1.3 Dictionary strategies (Main-category 3)

Table 5.4 Strategies to learn the meaning of unknown new words across four progress groups

Weekly reports		top in both	Top in course-vocabulary	top in general-vocabulary)	Bottom in both
N		30	30	30	30
Consulted dictionary during English lesson.					
%	Applied	95.00	100.00	5.00	24.17
	Not applied	5.00	0.00	95.00	75.83
Consulted teacher/fellow student during English lesson.					
%	Applied	88.33	99.17	99.17	92.50
	Not applied	11.67	0.83	0.83	7.50
Consulted dictionary while doing out of class self-study.					
%	Applied	100.00	100.00	100.00	0.83
	Not applied	0.00	0.00	0.00	99.17

As shown in Table 5.4, 95.00 % of the top in both group consulted a dictionary, and 88.33 % also asked others to check the meaning of new words during English lessons. 100.00 % of them also used dictionary strategies to check the meaning or to confirm the guessed meaning in dictionaries during out of class self-study to learn English vocabulary. 95.00 % of the top in general-vocabulary group did not consult a dictionary to confirm the meaning, and 99.17 % of them asked others for meaning during English lessons while learning course-related vocabulary. 100.00 % of the top in general group reported that they confirmed the meaning of unknown words from the dictionary while learning general vocabulary during out of class self-study.

As far as the top in the course-vocabulary group is concerned, 100.00 % of them applied dictionary strategies by consulting dictionaries to confirm the guessed meaning of unknown words during English lessons and out of class self-study to

learn course-related vocabulary. 99.17% also reported that they asked for help from teachers and other fellow students to confirm the meaning during English lessons. Results show that the bottom in both group did not apply dictionary strategies and preferred to rely on others to provide the meaning of unknown words. As shown in Table 5.4, 75.83% of the bottom in both group did not consult the dictionary during English lessons, and 92.50% of these participants consulted their teachers and fellow students to check the meaning of unknown vocabulary items during English lessons. Similarly, 99.17% of them did not refer to a dictionary to check the meaning of new unknown words during out of class self-study. The learners were also asked about the aim(s) of using dictionaries during the four weeks. The results are presented in Table 5.5 below.

Table 5.5 Aim(s) of consulting a dictionary across four progress groups

Weekly reports		top in both	Top in course-vocabulary	top in general-vocabulary)	Bottom in both
N		30	30	30	30
To check the meaning of unknown word					
%	Applied	100.00	100.00	100.00	67.50
	Not applied	0.00	0.00	0.00	32.50
To get details such as grammar, usage, pronunciation					
%	Applied	100.00	100.00	100.00	13.33
	Not applied	0.00	0.00	0.00	85.83
To confirm the guessing					
%	Applied	100.00	100.00	100.00	0.00
	Not applied	0.00	0.00	0.00	100.00
To get detailed information to prepare notes					
%	Applied	100.00	98.33	99.17	0.83
	Not applied	0.00	3.33	0.83	99.17

As shown in Table 5.5, 67.50% of the bottom in both group reported that their aims of consulting a dictionary (although used only occasionally) were to check the meaning of unknown new words. However, over 98.00 % of the participants from other three groups (top in both, top in course and the top in general) used a dictionary to check the meaning of unknown words, to get details such as

grammar, usage, pronunciation, to confirm guessing and to get detailed information to prepare notes to learn new vocabulary items.

The above-presented results in Section 5.2.1.3 show that the group of students who showed vocabulary gain in both general and course-related vocabulary used a variety of micro-dictionary strategies for both general and course-vocabulary learning. The results of multiple regression analysis (see Section 4.5) revealed dictionary strategies for comprehension as the positive predictor of course vocabulary gain. The results of multiple regression analysis also showed the selective-attention and self-initiative as the best predictors of general and course-related vocabulary gain. Response data of the diary reports elaborated this finding further by indicating the patterns of adopted dictionary strategies by the four groups of the students. The top in both group was the most successful in their lexical gain. These students took initiatives and selected micro-dictionary strategies during English lessons and during out of class self-study activities to learn vocabulary. On the other hand, the bottom in both group used dictionary strategies mostly for course vocabulary learning during their English lesson. However, the top in course group used dictionary strategies both during English lessons and during out of class self-study to learn course-vocabulary. Similarly, the top in general group also used dictionary strategies during English lesson and out of the class independent studies. However, they used dictionary strategies only to learn general vocabulary.

5.2.1.4 Note-taking strategies (Main-category 4)

The participants were asked about their vocabulary record keeping during the four weeks' period of vocabulary learning reports. The responses from the four groups of the participants are summarised in Table 5.6 below.

Table 5.6 Adopted note-taking strategies across four progress groups

Weekly reports		top in both	Top in course-vocabulary	top in general-vocabulary	Bottom in both
N		30		30	30
Prepared notes for course-related English vocabulary.					
%	Applied	100.00	99.17	21.67	50.83
	Not applied	0.00	0.83	78.33	49.17
Prepared notes for general English vocabulary.					
%	Applied	100.00	2.50	97.25	0.00
	Not applied	0.00	97.25	2.50	100.00
Prepared notes during the English lesson.					
%	Applied	100.00	100.00	40.83	50.83
	Not applied	0.00	0.00	59.17	49.17
Prepared notes during out of class self-study					
%	Applied	100.00	100.00	93.33	0.00
	Not applied	0.00	0.00	6.67	100.00

All 30 participants in the top in both group (see Table 5.6) reported throughout the four weeks that they prepared notes for general and course-related vocabulary during English lessons and during out of class self-study. They also prepared notes during English lessons, and out of class self-study, 97.25% of the top in general-vocabulary group applied note-keeping for general English, while the percentage decreased about 20% for the course-related vocabulary (78.33%). They mentioned in their comments that they did not prepare detailed notes for course-vocabulary. For instance, they just noted down the meaning of a new word and any details in the margin of books for course vocabulary during English lesson. However, for general vocabulary, they seemed to prepare detailed notes by using a variety of micro-note taking strategies, as indicated in the following comments. Few of the top in general group commented:

> *For course vocabulary, make notes by writing in the margin of books. During the lesson, I ask teacher or fellow student for meaning. I make notes or record new word after guessing for later dictionary check while studying general English vocabulary.* (69\top in general)

A sharper contrast between the two types of vocabulary for note taking was observed for the top in the course-vocabulary group. 97.25% of the top in the course-vocabulary group did not do note-taking for general vocabulary, while 99.17% of them prepared notes for course-related vocabulary during the lesson and out of class self-study to learn English vocabulary. Interestingly, note-keeping strategies were less frequently used by the bottom in both group. None of the bottom in both group seemed to prepare notes for general, 49.17% did not prepare notes for course-related vocabulary during English lessons, and none of them did note-keeping during out of class self-study to learn English vocabulary.

The participants were also asked about their aims in applying note-taking strategies, and results are presented in Table 5.7.

All 30 participants in the top in both group reported throughout the four weeks that their goals to prepare vocabulary notes were to memorise the new vocabulary items, to revise the new vocabulary items, to pass English exam and to improve general and course-related vocabulary. As far as the top in general-vocabulary group participants are concerned, their aims were to memorise, revise and improve the newly learnt vocabulary (100%). However, 71.67% of this group stated that they did not apply note-keeping for improving course-related vocabulary.

Table 5.7 Aim(s) to use vocabulary note-taking strategies across four progress groups

Weekly reports		top in both	top in course-vocabulary	top in general-vocabulary	Bottom in both
N		30	30	30	30
To memorise the new vocabulary item					
%	Applied	100.00	100.00	100.00	0.83
	Not applied	0.00	0.00	0.00	99.17
To revise the new vocabulary item					
%	Applied	100.00	100.00	100.00	0.83
	Not applied	0.00	0.00	0.00	99.17
To pass English exam					
%	Applied	100.00	97.50	40.00	55.00
	Not applied	0.00	2.50	60.00	45.00
To improve general English vocabulary					
%	Applied	100.00	3.33	95.83	3.33
	Not applied	0.00	98.33	4.17	98.33
To improve course-related vocabulary					
%	Applied	100.00	99.17	28.33	2.50
	Not applied	0.00	0.83	71.67	97.50

On the other hand, over 97 % of the top in course group reported that their aims to use note-taking strategies were to improve their course-related vocabulary, to pass their exam and to revise and memorise course-related vocabulary. Compare to the above three groups, the bottom in both participants reported that their sole aim for vocabulary note taking was to pass the English exam (55.00%).

The participants were also asked about their note-keeping methods. Table 5.8 summarises the results

All of the top in both group applied note-taking strategies, and 90. % of these students prepared detailed notes by noting down the meaning of the new word and its usage in a sentence in vocabulary notebooks. Over 95 % of the top in general-vocabulary group prepared general vocabulary notes by noting them down in the vocabulary note-books and wrote down the meaning and used them in a sentence. For course vocabulary note-keeping, 94.17 % of the top in general group reported that they noted down meaning in the margin of text-books during English lessons.

Table 5.8 Methods of vocabulary note-taking strategies across four progress groups

Weekly reports		Bottom in both	top in both	top in course-vocabulary	top in general-vocabulary)	Bottom in both
N		30	30	30	30	30
Note down in the margin of textbook						
%	Applied	91.67	4.17	99.17	94.17	91.67
	Not applied	8.33	95.83	0.83	5.83	8.33
Computerised note-keeping						
%	Applied	0.00	23.33	3.33	26.67	0.00
	Not applied	100.00	76.67	96.67	73.33	100.00
Note down in vocabulary note-book						
%	Applied	3.33	90.00	99.17	95.00	3.33
	Not applied	96.67	3.00	0.83	4.17	96.67
Note down the meaning of new word						
%	Applied	45.83	100.00	100.00	98.33	45.83
	Not applied	54.16	0.00	0.00	3.33	54.16
Note down by using it into sentences						
%	Applied	0.83	100.00	100.00	92.50	0.83
	Not applied	99.17	0.00	0.00	7.50	99.17

The top in the course-vocabulary group reported that they focused only course vocabulary to prepare notes. Over 99% of the top in course-vocabulary group applied note-keeping for course-related vocabulary by noting down the meaning of new word along with sentence use in their vocabulary notebooks and the margin of textbooks. As far as the bottom group is concerned, their methods to keep notes seemed limited; 91.61% of them applied note-keeping strategies by noting down the meaning of the words in the margin of textbooks, but they did not appear to take notes on computers (0.00%) or notebooks (3.33%).

5.2.1.5 Memory strategies (Main-category 5)

To memorise English vocabulary during four weeks, as shown in Table 5.9, all 30 participants of the top in both group reported that they first understood the meaning/definitions of the word, used them in sentences, repeated the word, again and again, revised and rehearsed, created image of the word in mind, by

remembering the context where this word occurred in the first interaction, its meaning, spelling and pronunciation.

Table 5.9 Adopted memory strategies across four progress groups

Weekly reports		top in both	top in course-vocabulary	top in general-vocabulary)	Bottom in both
N		30	30	30	30
First understood the meaning/definitions of the word					
%	Applied	100.00	100.00	100.00	4.17
	Not applied	0.00	0.00	0.00	95.83
Guessing helped me to remember the meaning and context of the word					
%	Applied	100.00	100.00	100.00	0.00
	Not applied	0.00	0.00	0.00	100.00
Used in a sentence to remember the word					
%	Applied	100.00	100.00	100.00	4.17.00
	Not applied	0.00	0.00	0.00	90.00
Repeated the word orally, wrote down, read it again and again					
%	Applied	100.00	99.17	100.00	48.33
	Not applied	0.00	0.83	0.00	51.67
Revised and rehearsed the vocabulary lists					
%	Applied	100.00	100.00	100.00	64.17
	Not applied	0.00	0.00	0.00	35.83
To memorise the word, I created image/picture of this word in my mind					
%	Applied	100.00	98.33	90.00	3.33
	Not applied	0.00	1.67	10.00	96.67
Tried to remember the context where it occurred to memorise and remember the word					
%	Applied	100.00	99.17	97.50	3.33
	Not applied	0.00	0.83	2.50	96.67
Memorised the spelling/pronunciation					
%	Applied	100.00	100.00	93.33	0.83
	Not applied	0	0.00	6.67	99.17

As far as the top general- and the top course-vocabulary groups are concerned, over 90.00 % of these participants applied memory strategies such as understanding the meaning and using it in sentences, guessing the meaning, remembering the context, repetition and rehearsal, imagery and learning word structure. In contrast, 90.00 % of the bottom students did not apply memory strategies, and 48.35 % reported that they applied oral and written repetition and 64.17 % of them used rehearsal strategies to memorise the vocabulary lists. The findings of the multiple regression analysis in Section 4.5 indicated that association with imagery turned out the best positive predictors for course vocabulary gain. However, semantic encoding was the negative predictors of course vocabulary gain. The findings of diary reports revealed that the top in

both, the top in course- and the top in general-vocabulary group used a variety of micro-memory and encoding strategies to memorise vocabulary. The differences in the adopted patterns of memory and encoding strategies were their selective-attention and self-initiatives towards using these strategies. For example, the top in both group applied memory and encoding strategies to learn both general and course-related vocabulary. The top in course-vocabulary group applied memory and encoding strategies to learn course-related vocabulary. On the other hand, top in general group used these strategies to learn general vocabulary. Their self-initiatives and selective-attention towards adopting memory and encoding strategies, therefore, seemed effective in their lexical progression. As the names of these groups suggest, the top in both group progressed in both general, and course vocabulary, the top in course group progressed better in course-vocabulary and the top in general group showed greater progress in general vocabulary.

5.2.1.6 Activation strategies (Main-category 6)

Table 5.10 summarises the participants' use of activation strategies. To activate English vocabulary, more than 97.50 % of the top in both and top in course-vocabulary participants used activation strategies, e.g., using learnt vocabulary items in communication and course-related tasks such as essay writing.

Table 5.10 Adopted activation strategies across four progress groups

Weekly reports		top in both	Top in course-vocabulary	top in general-vocabulary	Bottom in both
N		30	30	30	30
Kept using it in communication					
%	Applied	97.50	100.00	99.17	51.67
	Not applied	2.50	0.00	0.83	48.33
Kept using it in course-related tasks like essay, letter, memo writing					
%	Applied	97.50	98.33	37.50	3.33
	Not applied	2.50	3.33	62.50	96.67

Similarly, 99.17% of the top in general-vocabulary group reported that they used activation strategies and they activate already learnt vocabulary items in oral and written communication and vocabulary learning tasks.

However, they seemed to focus mainly on activating general vocabulary, and only 37.50 % of them used activation strategies to activate course vocabulary. The use of activation strategies by the bottom in both group was rather limited. While 51.67% of them reported that they used newly learnt words in communication, only 3.33% used learnt lexical items in course-related tasks.

5.2.1.7 Extra-curricular VLSs

Following the description of the curricular VLSs reported in diary reports, this section presents their responses in relation to extra-curricular VLSs.

The participants of diary reports were asked if they used the following extra-curricular VLSs to learn vocabulary.

- **Exposure to English media (Main category 7)**
  - Listening and watching English news on TV
  - Listening to English news on radio
  - Listening to English music
  - Watching matches and listening to commentary in English

- Watching TV programs with tele-text or subtitles
- Watching English movies/plays
- Watching English TV programmes

- **Exposure of English press (Main category 8)**
  - Reading English newspaper regularly
  - Reading English magazines
- **Social interaction (Main category 9)**
  - Video-conferencing with native speakers of English
  - Out of class events where the mode of communication is English

The findings of the adopted extra-curricular VLSs across the four groups are presented in the Table 5.11. As shown in Table 5.11, most students in the top in general-vocabulary group applied extra-curricular VLSs. Almost all participants in this group reported reading English magazines (95.83%), reading English newspapers (99.17%), watching English movies (88.33%), watching English programmes (99.17%), listening to English music (73.33%), watching and listening to news on TV (96.67%), listening to English commentary (93.33%), video conferencing with native speakers (85.88%). 53.33 % of the top in general group also participated in out of class events where the mode of communication was entirely English.

The top in both participants reported that they used extra-curricular VLSs to learn English vocabulary. For example, 80.83 % of the top in both group used to read English magazines, over 90% of them applied reading English newspapers, watching English movies/plays and English programmes.

Table 5.11 Adopted extra-curricular VLSs across four progress groups

Weekly reports		top in both	Top in course-vocabulary	top in general-vocabulary	Bottom in both
N		30	30	30	30
Listening and watching to English news on TV					
%	Applied	96.67	26.67	97.5	0
	Not applied	3.33	73.33	2.5	100
Listening news on radio					
%	Applied	28.33	24.17	20.83	1.67
	Not applied	71.67	75.83	79.17	98.33
Listening to English music					
%	Applied	60.00	10.83	73.33	6.67
	Not applied	40.00	89.17	26.67	93.33
Watching matches and listening to English commentary					
%	Applied	56.67	20.00	93.33	0.00
	Not applied	43.33	57.50	26.67	100.00
Watching programmes with English tele-text/subtitle					
%	Applied	35.00	3.33	24.17	0.00
	Not applied	65.00	96.67	75.83	100.00
Watching English movies/plays					
%	Applied	90.00	28.33	88.33	25.83
	Not applied	10.00	71.67	11.67	74.17
Watching English programmes					
%	Applied	95.00	35.83	99.17	4.17
	Not applied	5.00	64.17	0.83	95.83
Reading English newspapers					
%	Applied	100.00	22.50	99.17	24.17
	Not applied	0.00	77.50	0.83	75.83
Reading English magazines					
%	Applied	80.83	10.00	95.83	0.00
	Not applied	19.17	90.00	4.17	100.00
Video conferencing with native speakers of English					
%	Applied	73.33	14.17	85.88	6.70
	Not applied	26.67	85.88	14.17	93.33
Participating/attending out of class events where mode of communication was English					
%	Applied	60.00	25.83	53.33	0.83
	Not applied	40.00	74.17	53.33	99.17

Over 60% of the top in both group reported that they applied extra-curricular VLSs, e.g., watching and listening English news on TV, listening to English music, having native speakers' interaction and participating out of class events where the mode of communication was English. 56.67% of them were also habituated of watching matches and listening to English commentary, and 28.33% of this group applied listening to the news on the radio to learn English vocabulary.

As far as the top in the course-vocabulary group and bottom group are concerned, they seemed to apply extra-curricular VLSs less frequently than to the top in both and the top in general-vocabulary groups. Over 90% of the

bottom in both and the top in the course-vocabulary group did not apply extra-curricular VLSs to learn English vocabulary. The following comments from the bottom in both group indicate that their learning was restricted to the activities in the language classroom:

> *During lesson. Editorials and novels like Tess. I read novels like Tess. Novel Tess* (7\bottom in both)
>
> *Kept using it in communication during class activities to activate my vocabulary* (10\bottom in both)

The top in course group mentioned they did not have time for extra-curricular VLSs application. Although they applied a few extra-curricular VLS, they seemed to use these extra-curricular VLSs in isolation. For example, several participants mentioned:

> *I use extra-curricular activities or strategies to enhance my English vocabulary, but I do not make notes by doing this or revise. (Extra-curricular VLSs\102\top in course)*
>
> *I watch English news or go events, but I do not consult a dictionary or make guess to confirm meaning or learn it in detail. I never try because I focus course English as my main target*. (104\top in course)
>
> *For fun only. I cannot get a chance to make extra time to confirm guessed words or make lists to learn and revise vocabulary while watching TV or listening news or talking.* (105\top in course)

The findings of multiple regression analysis indicated the extra-curricular VLSs as the best positive predictor of general vocabulary gain (see Section 4.2). Reading English magazines, watching English movies, plays and participating in out of class events (where the mode of communication was entirely English) were also the positive predictors of general vocabulary gain. The response data of the diary reports also showed the similar results. The top in general group who showed a

lexical gain in general vocabulary frequently used extra-curricular VLSs to learn general vocabulary. Their selective-attention and self-initiatives towards using extra-curricular VLSs mainly to learn general vocabulary seemed to have a positive impact on their general vocabulary progress. Interestingly, the diary reports indicated that the top in both group used selective-attention and self-initiatives towards using extra-curricular VLSs for both general and course-related vocabulary.

5.3 Interview data analysis

As detailed in Chapter 3, semi-structured interviews were conducted with the same 120 students who also participated in the four weekly diary reports. While interview data, as well as questionnaire responses and diary reports, were all collected in the second phase of the study, interviews data were collected before data from the VLS questionnaire or diary study reports to minimise the effects of these methods on the interview responses. The results of the thematic analysis of interview data are presented in the following section.

5.3.1 Inter-coder reliability between two coders

As noted in Chapter 3, Section 3.4.2.1.1-d, interviews response data were coded by two coders, and both coders coded all 120 interview-response data independently. As shown in Table 5.12, Kappa of 0.621 for nodes extra-curricular VLSs, Kappa of 0.502 for nodes on curricular VLSs and Kappa value of 0.561 for overall nodes and sources were obtained. Since Kappa values between 0.40-0.75 were commonly cited as fair to good agreement (Cohen, 1968; Viera and Garrett,

2005), it can be suggested that the inter-coder reliability in the analysis was acceptable. As far as the exact agreement between two coders was concerned, the agreement average of nodes on extra-curricular VLSs was 97.090%, that of nodes on curricular VLSs was 88.109% and that for all nodes and sources was 92.599%.

Table 5.12 Inter-coder reliability between two coders

Coding Comparison Query results as they appear in NVivo between two coders	Kappa	Agreement (%)	Disagreement (%)
Average for node extra-curricular VLSs	0.621	97.090	2.909
Average for node curricular VLSs	0.502	88.109	11.891
Average for all nodes and sources	0.561	92.599	7.400

Results calculated by NVivo coding comparison and presented above indicated that there was a very good agreement between two coders who independently coded interviews by using NVivo 11.

However, some disagreement cases between two coders were also observed; 2.909% for extra-curricular VLSs, 11.891% for curricular VLSs and 7.400% for all nodes and sources. For those discrepancies, Coder 1's coding outcomes were selected to be used in this research since Coder1 was the researcher of this study and was more informed.

5.3.2 Coding scheme for interview data

As described in Section 3.3.2.3, a provisional list of main themes was informed by the literature on VLSs as reviewed in Chapter 2, Section 2.3. The coding was then carried out both deductively, using these provisional codes, and inductively, with additional codes developed in response to emerged aspects in the interview

data. Table 5.13 presents the final coding scheme that includes eleven main themes and forty-eight sub-themes.

Table 5.13 Coding scheme for interview data

	Main Theme	Sub-theme
	1 Meta-cognitive strategies (Selective-attention and self-initiative)	1.1 Dependent course-vocabulary study 1.2 Independent learning of general vocabulary 1.3 Independent learning of course vocabulary 1.4 Integrated approach 1.5 Isolated approach 1.6 Limited course-vocabulary 1.7 Limited general vocabulary 1.8 The first meeting of unknown words
Curricular VLSs	2 Guessing strategies	2.1 First interaction with new vocabulary item 2.2 Using background knowledge wider context 2.3 Using linguistic cues and immediate context
	3 Dictionary strategies	3.1 Aims of using dictionary 3.2 Types of dictionaries 3.3 Dictionary strategies for comprehension 3.4 Extended dictionary strategies
	4 Note-taking strategies	4.1 Aims of note-keeping 4.2 Note-taking for the course-vocabulary 4.3 Note-taking for the general vocabulary 4.4 Note-taking in margin of books 4.5 Note-taking by using computer 4.6 Vocabulary notebooks 4.7 Meaning-oriented note-taking 4.8 Usage oriented note-taking 4.9 Reason not using note-taking
	5 Memory strategies	5.1 First, understand the meaning and definition 5.2 Guessing helps to remember the context 5.3 Sentence usage to remember 5.4 Oral and visual repetition MS rehearsal 5.5 Using word lists MS rehearsal
	6 Encoding strategies	6.1 Association and imagery 6.2 Contextual encoding 6.3 Auditory encoding 6.4 Semantic encoding 6.5 Visual encoding and word structure
	7 Activation strategies	7.1 Oral and written communication and usage in everyday life out of class 7.2 Oral and written communication and usage during English lesson tasks in the class
Extra-curricular VLSs	8 Exposure to English media	8.1 Listening and watching English news on TV 8.2 Listening to English news on radio 8.3 Listening to English music 8.4 Watching matches and listening to commentary in English 8.5 Watching TV programs with tele-text or subtitles 8.6 Watching English movies 8.7 Watching English TV programmes
	9 Exposure to English press	9.1 reading English newspaper regularly 9.2 reading English magazines 9.3 English literature
	10 Social interaction	10.1 video-conferencing with native speakers of English 10.2 out of class events where mode of communication is English

The Main-themes shown in Table 5.13 are presented in the following sections explaining each category with interview quotes. Research Question 1, "what are the curricular and extra-curricular VLSs adopted by the Pakistani tertiary students to learn English vocabulary?", explored the patterns of VLSs by the Pakistani tertiary students to learn course-related and general vocabulary. The students were divided into four groups on the basis of their vocabulary progression during the twelve months of the study. The four groups are (1) those who showed more than average progress on both general and course-related vocabulary (top in both), (2) those who showed more than average progress only on course-related vocabulary (top in course vocabulary), (3) those who showed more than average progress only on general vocabulary (top in general vocabulary), and those who showed less than average progress both on general and course-related vocabulary (bottom in both). Like diary reports, the results of the thematic analysis of the interview data are presented in the following sections, while comparing four groups of learners who showed different levels of progress in general and course-related vocabulary.

5.3.2.1 Meta-cognitive strategies (Main-theme 1)

The interview participants were asked about their focused vocabulary for the whole academic year to find out what kind of vocabulary (general, course-related) was focused by the participants during the whole year and to explore possible reasons for their progress (or non-progress) in PVLT (general vocabulary) and/or in PCVT (course-related vocabulary). The responses show that all participants in the top in both group (N=30) focused both general and course-related vocabulary. It reveals that they used VLSs for both general and course-related vocabulary learning. One such participant said:

> *I try to improve my overall English communication and my CA course knowledge. I focus course-related vocabulary… I also focus on my general vocabulary which has nothing to do with exam or course, but it is for generally for my English communication improvement.* (2711\\ top in both)

On the other hand, more than half of the participants of the bottom in both group responded that they focused only on course-related vocabulary (N=20). They mentioned that their main aim was just to pass their exam and they believed that following course and teacher would be more than enough to pass their exam. The comment from the bottom in both group included:

> *I want to pass my CA exam, and that is why I follow my Course. I do not have time to improve my general English ….* (16-2825\\bottom in both)

The top in the course-vocabulary group (N=24) seemed to focus more on course-related vocabulary. Some detailed statements were given by the participants included the following. They frequently commented as follows:

> *I follow teachers, whatever they ask me to learn, such as course and exam related vocabulary*. (2856\\top in course)
>
> *I focus course vocabulary because it is really important for me to pass the exam.* (132\\top in course)

In contrast, the top in general vocabulary (N=25) tended to focus mostly on general vocabulary learning, and they used VLSs to learn general vocabulary. Some of the top in general group reported that they learn course-related vocabulary only during their English lessons, and they value learning general vocabulary much more highly, as shown in the comment below:

> *I focus vocabulary which comes in our everyday language or use; I think if I focus only on general, this is the best way. I learn course vocabulary during my lessons only….* (555\\top in general)

The interview participants were asked how they learnt English vocabulary. This was to explore an overall view of vocabulary learning and to explore the patterns of meta-cognitive strategies (if any). All of the top in both group reported that they applied meta-cognitive VLSs, e.g., self-initiative and selective-attention towards balanced vocabulary learning which shows their integrated approach towards a balanced vocabulary learning. They applied VLSs during their independent vocabulary learning focusing both general and course-related vocabulary. Similarly, most of the top in both group used VLSs to learn course-related and general vocabulary. They reported that they applied VLSs during English lessons and out of class self-study to learn course vocabulary which revealed their independent learning of course vocabulary by using VLSs. This revealed that they applied integrated approach towards vocabulary learning by applying self-initiatives and selective-attention towards balanced usage of VLSs. They commented:

> *I do a lot of strategies… First, I decide which word do I need to learn deeply and which word I just need to learn briefly*. (230-40\\top in both)
>
> *Well, I use different techniques. It depends on what and why I want to learn vocabulary. First, I make my mind do I need this vocabulary….* (237-1\\top in both)

As compared to the top in both group, the bottom in both group used an isolated approach towards using VLSs to learn vocabulary. The most participants of this group mentioned that they used very few VLSs. They did not integrate adopted VLSs to learn vocabulary. The findings of interview responses revealed that more than half of the bottom group (N=16) followed only their English teachers and English curriculum. They frequently commented as follows:

> *I follow teacher only. Teacher gives us homework and then take the test. I learn 20-course words daily. (166\\bottom in both)*
>
> *Dictionary is the top I believe. I got a pocket dictionary and digital as well. This is what every student should do. I think I am improving a lot. (510\\bottom in both)*

On the other hand, most of the top in general group noted that they used VLSs only to learn general vocabulary and indicated their limited usage of VLSs for course-related vocabulary learning. Most of the top in general vocabulary group applied independent learning to learn general vocabulary and also used VLSs but mostly to learn general vocabulary. Their interview responses revealed that these students applied a limited usage of VLSs to learn course-related vocabulary. They noted:

> *I learn course vocabulary during the lesson, and that's enough to pass my exam.… I focus teachers and do memorization during lesson time.* (164\\top in general)
>
> *I only focus general vocabulary such as communicational one because I believe this is what I need to boost up my future career. I try to understand it by guessing the context. I have to… I note them down quickly and consult dictionary later to prepare notes. However, during the lesson, I never guess, I ask my teachers straight away to save my time. I try to learn course vocabulary during lessons only…. (503\\top in general)*

Incongruent with the diary reports findings, the top in course-related vocabulary group used VLSs to learn mainly course-related vocabulary. Their responses in the interview show their limited usage of VLSs for general vocabulary study. They noted:

> *I listen to news on the radio while coming to Uni and going back home but nothing else. Sometimes I watch English movies … but I don't put extra effort.* (2969\\top in course)
>
> *I focus on English media and English broadcast. But I seldom make notes vocabulary related to this platform or use dictionary to confirm the meaning.* (241\\top in course)

On the other hand, all the (N=30) top in course-vocabulary group applied independent learning of course-related vocabulary. They used mostly curricular VLSs to learn their course vocabulary during their English lessons and after college while doing their independent study. Their usage of VLSs for general English vocabulary seems quite limited which may be one of the causes of their progress only in course vocabulary. Some of them commented:

> *I follow and listen to my teachers. I focus my course books...I do my independent study and focus course book and learn and memorise and revise it regularly.* (2926\\top in course)
>
> *I focus course vocabulary lists and course books. I also follow my teachers and don't waste time in reading or studying other than my course books.* (2981\\ top in course)

The interview participants were asked about their opinions in relation to their adopted VLSs, in order to explore students' perceptions about strategies that they applied to learn English vocabulary. Most of the top in both group reported that they described a mixture of all the VLSs and they experienced this approach as the best in vocabulary learning. A number of statements were given by the participants included the following:

> *All of them because if I apply only few I mean if I apply dictionary and don't revise or use these items, I will forget so one strategy cannot do a lot, in my own experience, all of them are equally important.* (380\\top in both)

Most of the top in the course-vocabulary group (N=30) believed that they should focus their syllabus and follow teachers. They used a mixture of VLSs to learn course vocabulary. This group believed that this was the best method and best strategy to learn English vocabulary. However, their integrated approach

towards vocabulary learning seemed limited to studying course-related vocabulary. Their comments included:

> *I apply dictionary, guessing, focusing syllabus. I prepare notes of the vocabulary related to my syllabus, and I also revise it regularly to learn course vocabulary….. (319\\top in course)*
>
> *Movies are very interesting and the best way to learn vocabulary, novels are interesting too but sometimes while reading novel, I focus on context, never focus on learning vocabulary…. (534\\bottom in both)*

Most of the top in general-vocabulary group (N=28) responded that they used English media, English press and English exposure as the main strategy to learn English vocabulary. However, they also used other VLSs such as guessing strategies, note-keeping strategies, dictionary strategies, memory strategies, encoding strategies and activation strategies to learn and to memorise vocabulary exposed by these modes. Some of them commented as:

> *It is very good to learn English from English media, for example, watch movies with subtitles and don't forget to note new words and guess first and then check the dictionary and use them in real life conversations*. (333-5\\top in general)

Similar to the diary reports findings, the bottom in both group indicated in interviews that their usage of VLSs was dependent as they were applying only VLSs that were suggested by English teachers. When the bottom in both group was asked about the specific VLSs that they used, they responded that they applied only one or two strategies in isolation. Three-quarters of the bottom group participants reported that they applied very few VLSs and in isolation. For instance, using just dictionary strategies or just guessing strategies. They used those strategies advised by the teacher which they seemed to believe as the most effective VLSs blindly. They frequently commented as follows:

> *I use most of the time dictionary to learn English vocabulary…… Dictionary, newspaper, communication and following teacher.* (N\\510\\bottom in both)

Similar to diary reports, the findings of the interview data revealed that the patterns of adopted meta-cognitive strategies across the four progress groups seemed different. The top in both group seemed active in using a variety of meta-cognitive strategies in relation to their selective attention and self-initiative to learn vocabulary. The top in the course-vocabulary group also took their initiatives, but they selected mainly course vocabulary and used VLSs to learn course-vocabulary specifically. The top in general group used meta-cognitive strategies, but their main focus was to improve general vocabulary. The bottom in both group seemed the most reluctant in using meta-cognitive strategies and either followed their teachers or selected to use very limited VLSs.

The previous section summarised the meta-cognitive strategies; the next section will focus the guessing strategies and the initiatives of the learners on the first meeting of unknown words.

5.3.2.2 First meeting of the unknown words and guessing strategies (Main-theme 2) First interaction

To explore if students used guessing strategies, the interview participants were asked about their first interaction with new unknown lexical items. The responses indicate that most of the top in both, the top in course-vocabulary and top in general-vocabulary group participants always guess the meaning first when any unknown word occurs in text or while talking to others. Most of them also reported that they noted down the newly guessed words for further

learning. By contrast, more than half of the bottom in both group tended to ask fellow students and teachers for the meaning and two third of the bottom in both noted that they consulted a dictionary to check meaning straightaway. The participants gave some statements included the following.

> *I always guess the meaning from context during lesson and in daily communication and then carry on reading* (235-1\\top in both)
>
> *I ask my teacher for the meaning of the unknown word that occurs. I do not use a dictionary. I never need it because whenever I need to know any meaning, I ask my teacher or friends for meaning.* (578\\bottom in both)
>
> *If I am reading and unknown words come, I immediately check meaning from the dictionary.* (bottom in both)

On the other hand, most of the top in course group (N=28) and all participants of the top in general group used guessing strategies. However, the top in course group reported that they applied guessing strategies while learning their course-related vocabulary and the top in general group stated that they used guessing strategies mainly in relation to learn general vocabulary. They stated:

> *I always read the sentence twice and try to guess the meaning from context during the lesson*. (SH\\259-43\\top in course)
>
> *I guess the unknown meaning. Especially outside class while reading the magazines and unknown word come, I try to understand by guessing ….* (2669\\top in general)

The participants were asked how they had been applying guessing strategies for the whole year. Similar to the diary reports, the participants reported in the interviews that guessing strategies were applied by nearly everybody (N=29) in the top in both group, the top in the course-vocabulary group and over two-third (N=23) of the top in general-vocabulary group. It seems that these three groups often guessed the meaning first when unknown word occurred. They often

guessed the meaning by using background knowledge, by using the wider context by the specific text, by linguistics cues and the immediate context where the word appeared. On the other hand, the bottom in both group did not apply guessing strategies at all. Some statements were given by the participants included the following:

> *I try to understand the main idea or message and its meaning in the context. Then I read the whole text to find out if it fits in the context*. (46\\top in both)
>
> *I also notice the grammatical usage, collocations, prefix, suffix and expressions.* (221-20\\top in both)
>
> *I read the whole paragraph and underline the unknown words. Then again, I re-read each sentence and try to guess the meaning from its context*. (132\\top in course)
>
> I *always get clues from grammatical use, suffix and prefix*. (2981\\top in course)
>
> *When unknown words come, I guess it from its context. I try to understand the main theme or idea and then guess it from its context*. (182\\top in general vocabulary)
>
> *I use grammatical clues or other words which are used before and after this word.* (389\\top in general)

Most of the participants in the bottom group (N=28) reported that they did not use guessing strategies because they often ended up in guessing wrong. Half of them preferred to ask teachers or consult a dictionary instead of guessing the meaning. One of the participants mentioned it in his interview:

> *I am not good at guessing, always wrong, so I never waste my time and consult a dictionary. I know it will come in my exam, but even if I do not solve this question, still I can get passing marks.* (bottom in both)

Similar to quantitative findings, interview data revealed that the group of learners who seemed to have progressed both in course- and general-vocabulary used a variety of guessing strategies. Discovery strategies of guessing may

facilitate these successful learners to gain knowledge of new words at the initial stages of learning.

The previous section focused the guessing strategies; the next section will summarise the findings of interview response-data about the adopted patterns of dictionary strategies by the four groups of the students.

5.3.2.3 Dictionary strategies (Main theme 3)

To explore the patterns of adopted dictionary strategies (if any), the four groups of participants were asked about their adopted dictionary strategies (if used). Their responses are summarised below.

(1) Aims of using dictionaries strategies

Mostly all of the top in both, the top in the course and the top in general group used dictionary strategies to confirm the guessed meaning and to get detailed information about the new vocabulary items to prepare notes and further learning. The top in both noted a variety of their aims of using dictionary strategies. They pointed out that they used dictionary strategies to confirm the guessed meaning, to prepare their vocabulary notes, to check the meaning of the unknown word (dictionary strategies comprehension), and to learn the detailed information of the target word, e.g., synonyms, antonyms, sentence use, grammar (extended dictionary strategies). Some statements were given by the participants included the following

> *To make my notes, I use a dictionary, I check its meaning, usage, sample sentence or grammatical use, its synonyms and antonyms and then make my detailed notes. (224-27\\top in both)*

> *I check in dictionary related same words, opposites, used sentences… or adjective or gerund. (230-40\\top in both)*

In line with the diary reports responses, most of the top in course group mentioned that they used comprehension and extended dictionary strategies to learn course-related vocabulary. Some of them noted:

> *Then later I confirm guessed the meaning from the Monolingual dictionary.* (114-2940\\ top in course)

> *I get more detailed information to note it down in my notebook before starting learning of the course vocabulary items*. (11-2901\\top in course)

> *I check pronunciation, its synonyms, antonyms, grammar and example sentence for my course vocabulary in digital English to English dictionary*. (173\\ top in course)

More than two third of the top in general group reported that they used dictionary strategies to learn general vocabulary. They used dictionary strategies to check the meaning, synonyms, antonyms, grammar, usage, example sentences and pronunciation. and detailed information about the new words aiming to prepare notes and further learning. Their comments included:

> *Later I checked them from the dictionary and prepared detailed notes*. (382\\top in general)

> *For general vocabulary, I check meaning as well as other details.* (275\\top in general)

> *I check the definition, example sentence, synonyms, antonyms, pronunciation and different expressions related to that word. I also check grammatical information such as the form of verb, adverb, adjective, gerund, noun, pronoun.* (279\\top in general)

Dictionary strategies were also used by the bottom in both group, but their use of dictionary seemed to be rather limited to checking the meaning of a new word, as 26 of them responded so. One of the participant of the bottom in both group noted:

I use a dictionary just check new words meaning. (16-2825\\bottom in both)

More than two-thirds of the participants in the top in both, the top in the course and the top in general group used *monolingual dictionaries* to check the meaning and details of the new word.

I use English to English dictionary….learning. (224-27\\top in both)

I look up the meaning of the word in Oxford digital dictionary. (259-43\\top in course)

I confirm my guess by consulting monolingual Oxford digital dictionary. (359\\ top in general)

I use English to Urdu dictionary to check the meaning of the new word. (16-2825\\bottom in both)

As summarised in this section, the participants' responses in interviews revealed that top in both group used dictionary strategies which may lead them to learn their vocabulary which is in line with the quantitative findings. Dictionary strategies are not learning strategies as they are discovery strategies which may facilitate learners to discover the meaning, usage and definition for learning purposes (Schmitt, 1997). Quantitative findings of VLS questionnaire and vocabulary tests also indicated the positive relationship between dictionary strategies for comprehension and course-related vocabulary gain.

The next section will summarise the findings of interview data focusing note-taking strategies.

5.3.2.4 Note-taking strategies (Main theme 4)

To explore the patterns of adopted note-taking strategies (if any) across the four groups, the interview participants were asked if they had been using note-taking strategies. Their responses are summarised below.

Most of the top in both group mentioned that they used note-taking strategies to learn both general and course-related vocabulary (N=27). They revealed their adopted meaning-oriented and usage-oriented note-taking strategies in detail and most of them reported that they prepared note-books for vocabulary learning where they noted down the information of new words, e.g., meaning in English (L2) and Urdu (L1) (N=28), usage, grammatical information, synonyms, antonyms and verb forms (N=29).

One-third of the top in both group prepared computerised notes and saved files in online drives so that they could have access to their vocabulary notes when they are out and about. More than half of the top in both group took notes on traditional notebooks and used them for revision and memorisation of vocabulary. They noted:

> *I prepare lists both for general and for course vocabulary and keep them in my diary. I make lists and write down the meaning, synonyms and antonyms.* (233-1\\top in both)
>
> *I always make my notes; I make my sentences. Then I write its grammar like different farms. Then use it in my sentences. As I said before, I make lists, put similar or opposite meanings together in my notebook, write down details. Most of the words have a different meaning in different context, So I write down each sentence in each context.* (374\\top in both)

On the other hand, like the top in both group, most of the top in course group (N=28) and the top in general vocabulary group (N=29) reported that they applied meaning-oriented and usage oriented note-taking to learn English vocabulary. The only difference between these three groups was that most of the top in both group used note-taking strategies to learn both general and course-related vocabulary. In contrast, more than half of the top in general group (N=18) reported that they applied these strategies only to prepare notes

for general vocabulary. Eight of the top in general group noted that they prepared computerised, and nine of them prepared manual note-books for vocabulary learning. Some of their comments are:

> *I prepare general vocabulary notes by writing meaning*. (389\\top in general)
>
> *I made my notes so that I can memorise these words and remember them so that I could use them in my communication*. (346\\top in general)
>
> *I do not make notes for these course-related vocabularies. I do not feel any need to make notes for course vocabulary as vocabulary lists are already given in textbooks as well as other things related to the syllabus*. (90\\top in general)

Similarly, as illustrated in some comments below, more than half of the top in the course-vocabulary group (N=19) applied note-taking strategies only to learn course-related vocabulary. Less than one-third of the top in course group wrote meaning in the margin of books (N=8), and nearly two-thirds of them also prepared vocabulary notes in their notebook in detail (N=18).

> *I make lists and write down the meaning of the target word*. (27\\top in course)
>
> *I note down synonyms and antonyms. Then I write its grammar like different farms. Then use it in my sentences*. (259-43\\top in course vocabulary)
>
> *I have been preparing notes and I revising them regularly. I note it down in my notebook before starting learning, of course, vocabulary items. I note them down and try to revise them. I always write new words in different sentences….* (2901\\top in course)

The least user of note-keeping strategies was the bottom in both group. Only four of the bottom in both group mentioned that they used meaning-oriented note-keeping strategies, and only five of them reported that the use of usage oriented note-keeping strategies. only four of them reported that they prepared vocabulary notebooks where they write the words and their meaning. However, more than half of this group mentioned that they note down the meaning of the word in the margin of books. seven of the bottom in both group revealed the

reasons why they did not apply note-keeping strategies. The bottom in both group mentioned:

> *I write it in the margin of my book. I write briefly in my course book, but I do not make any notebook. In the margin of my books*. (2825\\bottom in both)
>
> *I do not make a note because it is a waste of time and I am very busy in other subjects as well. I know I will pass my English exam without this… It is useless I think*. (540\\bottom in both)

The findings of interview data, similar to diary reports, indicated the difference in the adopted note-taking strategies between the four progress groups of the learners. The top in both group used note-taking strategies to learn both course and general vocabulary. They prepared meaning- and usage-oriented vocabulary notes to keep the record of words, to memorise and revise them to enhance their vocabulary knowledge. The similar patterns were seemed to be used by the top in the course and the top in general group, but the findings revealed that the top in both group used note-taking strategies more frequently as compared to the other three group. Other differences also lied in their meta-cognitive strategies in relation to their note-keeping. For example, top in course group applied note-taking strategies to facilitate their course vocabulary learning, and the top in general group used these strategies to learn general vocabulary.

After summarising the interview findings of note-taking strategies; the next section will focus the interview findings of memory strategies.

5.3.2.5 Memory strategies: rehearsal and encoding (Main theme 5, main theme 6)

The interview participants were asked about their use of strategies to memorise the vocabulary items to explore the pattern of applied strategies across the four progress groups. The findings are summarised below.

The top in both group used a variety of memory and encoding strategies to learn both general and course-related vocabulary. More than one-third of the top in both group reported that they first understood the meaning and usage of the new vocabulary item in context and then started further learning. They used the new words in sentences and tried to remember the contexts where these words first occurred. More than two-thirds of the top in both group repeated and revised orally and visually the new vocabulary items and used vocabulary lists to rehearse and memorise them for later retrieval (N=22). Their responses revealed that their aims behind using guessing strategies, note-taking strategies and dictionary strategies included the memorisation of new words. Their comments included:

> *To memorise I read it and listen to it again and again to remember the context. Moreover, I pronounce it again and again*. (203-52\\top in both)
>
> *I make a list of newly learned words both general and course, and try to remember that list, try to reread this list at night and whenever I am free. I make notes, and… then I revise it. So, it comes back to my memory*. (23-2910\\top in both)

The top in both group also used encoding strategies, e.g., contextual encoding, association and imagery and visual encoding. More than half of them (N=17) reported that they tried to remember the new words by grouping the new words that share a similar art in spelling. They acted out a word to remember it better.

They created a mental image of the new word to help them to remember it. They associated one or more letters in a word with the word meaning to help them remember new words. They visualised the new word, associate a new word with a known word that looked similar and remembered the spelling of a new word by breaking it into several visible parts. They remembered the new word used in the sentence, remembered the new word together with the context and made their own sentences by putting these new words in context to remember them. Over one-third of the top in both group (N=11) also used visual encoding and word structure to remember the new words. They reported that they learned word-formation rules to remember new words. In addition, four of the top in both group mentioned that they used auditory and semantic encoding strategies to remember vocabulary. Some of their comments are presented below:

> *To remember it, for example, I give this word the name of any character. For instance, if my cousin is careless and while making notes, I write down the name of my cousin to remember that word*. (442\\top in both)
>
> *Then make my sentence and try to remember this word in sentence or context.* (217-8\\top in both)
>
> *I sort out spellings in syllable wise. Well, I already said that I try to spell it, in my mind I break it into syllables.* (*2910**top in both)*

Similarly, the top in the general and the top in the course-vocabulary group also used memory and encoding strategies. However, they were the less frequent users of these strategies. More than half of the top in general-vocabulary group (n=16) used the contextual coding, association and imagery, visual encoding and word structure to learn vocabulary. They used words lists for rehearsal purposes, and most of them used oral and visual repetition to memorise new words. One-

third of them learnt the meaning and usage of new words before starting learning them and reported that they remembered vocabulary along with its context. On the other hand, more than half of the top in general group mentioned they used contextual encoding and nine of them also used association and imagery encoding to remember new words. A few comments provided the top in general vocabulary group are as follows:

> *I guess their meaning from context; it helps me to memorise and remember it*. (2\\top in general vocabulary)
>
> *I use guessing as it helps me to memorise new words because contexts are easy to remember*. (503\\top in general vocabulary)
>
> *I read it along with its spelling and pronounce it aloud*. (377\\top in general vocabulary)
>
> *I have been making an image in my mind which helped me to memorise the new word.* (346\\top in general vocabulary)

Likewise, the top in the course group used the contextual coding, association and imagery, visual encoding and word structure to learn vocabulary. They learnt the meaning and usage of new words before starting learning them and remembered vocabulary along with its context. Most of them also used oral and visual repetition to memorise new words. They used words lists provided in course books for rehearsal purposes. Like the top in general group, they also used encoding strategies, e.g., association and imagery, contextual encoding and visual encoding to remember vocabulary. The top in the course-vocabulary group noted as:

> *To memorise, I first write the word and its meaning. I also to get detailed information about the word so that I can memorise it and use it in my work*. (27\\top in course-vocabulary)
>
> *I write it down in different sentences and read them five times, and it helps me to memorise it*. (173\\top in course vocabulary)

> *I revise and repeat and reuse vocabulary lists on a regular basis*. (238\\top in course vocabulary)
>
> *I make an image of this word in my mind.* (134-2969\\top in course vocabulary)
>
> *I always write new words in different sentences in different contexts which help me to remember new words*. (2901\\top in course vocabulary)
>
> I memorise its pronunciation, spellings and word parts. (102-2926\\top in course vocabulary)

The bottom in both group was the least user of memory and encoding strategies. Unlike the other three groups, only one-third of them used oral and visual repetition to rehearse the new words. They did not use a variety of memory and encoding strategies, and their memory strategy usage seemed very limited as illustrated in the following comment:

> *I repeat the vocabulary when the teacher asks me to do this in class during a lesson*. (510\\bottom in both)

These interview comments provide further insights into the findings of the VLS questionnaire and the diary reports on memory and encoding strategies. The quantitative findings revealed that memory strategies (e.g., association and imagery) turned out to be a positive predictor of the course-related vocabulary. Interview data revealed that the top in both, top in the course and top in general vocabulary group used a variety of micro-memory and encoding strategies. It might be the case that association and imagery work better if they are used along with all of the memory and encoding strategies. The bottom in both group who was the least progressed group used only limited micro-memory and micro-encoding strategies in isolation.

After exploring the adopted memory and encoding strategies revealed in interview responses; the next section will summarise the adopted activation strategies stated by the four groups of students in their interviews.

5.3.2.6 Activation strategies (Main theme 7)

The interview participants were asked whether and how they activated their learnt English vocabulary to explore the applied activation strategies across the four progress groups. The summary of their responses is presented below.

All participants in the top in both and almost all of the top in the course and the top in general vocabulary participants (N=29) applied activation strategies to activate their vocabulary. Two third of the top in both (N=20) and the top in the course-vocabulary group (N=21) used activation strategies to activate course-related vocabulary during English lessons while performing communicational tasks. On the other hand, none of the top in general-vocabulary group mentioned that they used activation strategies during English lessons. However, most of the top in general group applied activation strategies during out of class communication and usage in everyday life.

The use of activation strategies was also limited in the bottom in both group. Only about a third of the bottom in both group (N=11) used oral and written communication and usage in every day out of class, and only one-sixth of them activated newly learnt vocabulary by using these words in oral and written communication during their English lessons. Some statements given by the four-different progress group are exemplified below.

> *I always revise them lot. I try to use newly learned words in communications. I am fond of reading, and these words come again and again, and in this way, they get revised, I try to use new words in my sentences, I use them in communication, oral or written. I use them in presentations or talking to my family and friends. I revise them and use them in communication.* (2917\\top in both)
>
> *I revise and keep using newly and previously learned vocabulary items in my essay writing, comprehensions, letter and dialogue writing. I also use these words in communications and presentations*. (2955\\top in course)
>
> *I use it in my written, spoken communication. I read related books, and I watch English related programmes so same words come again and again, and it gets revised.* (279\\top in general).
>
> *I use it in communication whenever the teacher asks me to participate in classroom activities*. (495\bottom in both)

Interestingly the top in both, and the top in course vocabulary group used the similar macro- and micro-activation strategies. However, vocabulary tests revealed that the top in both group progressed greatly in both general and course vocabulary, whereas the top in course group showed a great lexical gain in course-related vocabulary. This group had also shown some progress in general vocabulary, but it was just less than the average. The findings of the diary reports and interview seem to indicate that though both of these groups used the similar activation strategies, their patterns of self-initiative and selective-attention were different from each other. That is, the top in both group used VLSs to learn both general and course-related vocabulary, while, the top in course group used VLSs mostly to learn course-related vocabulary. The difference in their meta-cognitive decision seemed to lead to the different progress levels in the two types of vocabulary.

The interview findings of the curricular VLSs have summarised and discussed in the previous sections; the next section will focus the extra-curricular VLSs used by the four groups of students.

5.3.2.7 Extra-curricular VLSs (Main theme 8,9,10)

The interview participants were asked about what do they do to learn general vocabulary and if there are any other methods which help them to learn their general vocabulary. The summarised findings are presented below.

The top in both and the top in general-vocabulary group reported their strategic exposure to English media to learn vocabulary. They include reading English magazines and Newspapers, watching English movies, plays and TV programmes and listening to matches commentary and the music. All 30 participants in the top in both group reported their use of English media to learn general vocabulary. More specifically, most of the top in both group (N=28) commented that they read English newspaper, and more than two-thirds of these students read English magazines to learn vocabulary. A few remarks provided the top in both group are as follows:

> *There are so many methods which I apply. I improve my general vocabulary or English from social interaction and having some activities, for instance, watching English movies or reading English newspapers…I use guessing from context, dictionary meaning and example check; then I make my notes, I revise them, and some time to learn a new word.* (2921\\top in both)
>
> *I read English newspaper The Nation every day. (230-40\\top in both)*

About two-thirds of the top in both group reported that they watch English movies and plays (N=19), watch TV programmes (N=20), watch programme with tele-text and subtitles (N=20) and participate in out of class events where the

mode of communication was English to learn vocabulary. Over half of the top in both group used to listen to English music (N=17) and English literature to learn vocabulary. In addition, one-third of the top in both group also reported that they watch and listen to the news on TV (N=10) and watch matches and listen to English commentary (N=9). Some statements given by the top in both group are exemplified below.

> *I am interested in English literature. I read novels. Modern, Romantic, Victorian dramas and poetry. I read Shakespeare... and pride and prejudice.* (40\\top in both)
>
> *I have native friends from England whom I chat and call daily. I listen to BBC London News; I watch English movies once a week with tele text... I learn a lot of English vocabulary in this way*. (2921\\top in both)
>
> *When I talk in English, that is a very best way to learning English vocabulary. In Pakistan where English is not the first language, and people prefer to talk in Urdu, whenever I get a chance to communicate in English or participate any group or events where the mode of communication is English I learnt a lot*. (2910\\top in both)

Similarly, the top in general group used a variety of extra-curricular VLSs to learn general vocabulary. Most of the top in general group used video conferencing (N=29) to have native speaker interaction for pleasure and vocabulary learning. Over two-thirds of the top in general group used other extra-curricular VLSs such as, reading English newspaper (N=22), watching English TV programmes (N=24), watching programmes with tele-text and subtitles (N=21), watching and listening to English news on TV (N=20), and reading English literature (N=22) including English poetry, drama, prose and novels to learn general vocabulary. More than half of the top in general vocabulary group read English magazines (N=16), watching English TV programmes (N=19) and participating out of class events

where they were used to communicating in English (N=16). Seven of them also mentioned that they listened to English music to learn general vocabulary. Their specific comments included:

> *I read newspapers, novels and English magazines. I listen to English news on BBC TV. I make notes and revise them*. (503\\top in general)
>
> *I learn English vocabulary from social interaction while listening and speaking to my friends and family on Skype. My cousins live in the US, and they are native speakers. I learn a lot. I learn while talking to my friends and family in England, US.* (164\\top in general vocabulary)
>
> *I listen to English songs*. (383\\top in general)

Furthermore, the top in general group mentioned that they linked curricular VLSs with extra-curricular VLSs to learn their general vocabulary. For example, the top in general group guessed the unknown vocabulary which they encountered while reading English newspaper, magazines and prose while watching movies or listening to English news on TV, music and commentary, and during communicating to others. They noted down these words for later re-visit. They checked these words in dictionaries to confirm the meaning and to prepare detailed notes. They further memorised these words and used these words in communication to activate them. Some statements given by the top in general group are exemplified below.

> *I participate in out of class events like exhibitions. We are a group of friends who had throughout English medium, we communicate in English, and if any word unknown comes, I write it on my card and carry on communication, then I check the meaning in the dictionary and keep notes but sometimes I ask them as well.* (78\\top in general)
>
> *I also read English journals of fashion, politics and about current global affair.. unknown word come, I guess it from its context. I underline it or note it down. then I check its meaning from the dictionary, and I note it down the whole sentence, then I*

> *write down using this word into my sentences in different contexts.* (182\\top in general)
>
> *In the evening, I watch and listen to English News on BBC, most of the news gets repeated, … consult English to English dictionary, prepare notes by checking their details in the dictionary. Then I note down meaning, and I write down my sentences. I revise them and do oral repetition until they get memorised.* (377\\top in general)

As compared to the top in both and top in general vocabulary groups, the top in course vocabulary and bottom in both participants reported very limited (or no) use of extra-curricular VLSs to learn vocabulary. In the top in the course-vocabulary group, only three of them listened to English radio news, and about half of them (N=13) participated in out-of-class events where the mode of communication was English. However, they reported that these activities were for pleasure rather than using these activities strategically to learn vocabulary. Apart from these, none of the exposure to English as reported by the top in both and top in general groups was mentioned by this group. Similarly, while one-third of the bottom in both participants reported that they read English newspapers (N=10) and watched English movies (N=10), they stated that these activities were just for entertainment not to learn English vocabulary. Some of their comments are:

> *FM radio listening. I watch English movies, English TV and read English newspaper but for entertainment and I don't check the meaning or note down the general vocabulary because I am focusing my study*. (2901\\top in course)
>
> *Reading English newspapers, watching English movies, speaking to oversee cousins and listening to English music and participating out of class events where the mode of communication is English but only for fun. I don't use a dictionary or make notes for general vocabulary improvement. It will waste my time*. (EC\\234\\top in course)

5.4 Summary of results and discussion

In this section, the two research questions of the current study are addressed, by summarising and synthesising the study findings obtained from multiple data sources and by discussing these results in light of the literature on VLSs reviewed in Chapter 2.

5.4.1 Summary and discussion of the results for Research Question 1

This section summarises and discusses the findings that informed Research Question 1:

RQ1. *What are the curricular and extra-curricular VLSs adopted by Pakistani tertiary students to learn English vocabulary*?

5.4.1.1 Use of macro-curricular and macro-extra-curricular VLSs

Finding 1: Pakistani tertiary students used both macro-curricular and macro-extra-curricular VLSs to learn their course and general vocabulary. However macro-curricular VLSs are used more frequently than macro-extra-curricular VLSs.

In the first stage of informing the first part of the research question on curricular and extra-curricular VLSs, the VLS questionnaire responses were scrutinised through descriptive statistics (Section 4.2.2.2, Section 4.2.2.6), which found that macro-curricular and macro-extra-curricular VLSs were in general widely adopted by the 578 participants to learn English vocabulary.

The response results of VLS questionnaire reflected that Pakistani tertiary students use macro-curricular and macro-extra-curricular VLSs to learn their

course and general vocabulary. However macro-curricular VLSs seemed to be used slightly more frequently than macro-extra-curricular VLSs.

Since the points in the Likert scale used in the VLS questionnaire were: 1=*Never*, 2=*Seldom*, 3=Sometimes, 4=*Often*, 5=*Always*, the participants of this study, on average, reported that macro-curricular VLSs were used nearly *sometimes* (M=2.77, SD=1.21) during the past one year, while macro-extra-curricular VLSs were used on average, *Seldom* to *Sometimes* (M=2.62, SD=1.50).

The current study reported the more frequent use of curricular VLSs as compared to extra-curricular VLSs. This confirms the findings of Safian, Malakar and Kalajahi (2014), who found that university students in Malaysia ESL context used mostly curricular VLSs (e.g., discovery strategies, memory strategies, cognitive strategies) in their survey.

The finding of the current study expanded this point by identifying that undergraduate in Pakistani ESL context also used more curricular VLSs as compared to the extra-curricular VLSs including social strategies to learn the course and general vocabulary. It might be due to the fact that (see Section 2.6) Pakistani teachers are not fully trained to apply communicative learners' centred teaching approaches. Pakistani ESL learners are not encouraged to use language and vocabulary learning strategies, independent and informal learning by their teachers due to the adopted teacher-centred approaches as discovered by class observations and teachers' interviews. However, due to the impact of foreign qualified and trained teachers, modern styles of teaching and learning have been

introduced in Pakistani ESL context. With these positive changes, there are still empirical studies needed to fill the gap by implicating new insights for effective learning of L2.

Finding 2: The study found that the adopted patterns of macro-curricular VLSs across the four progression groups were different. *Finding 2* also indicates that the successful learners (the top in both, the top in the course and the top in general vocabulary group) used macro-curricular VLSs more frequently compared to the unsuccessful learners (the bottom in both). It also highlighted that the top in general group used macro-curricular VLSs more or less with same frequencies to the top in course group. The top in both group used macro-curricular VLSs with slightly lower mean compared to the top in the course and the top in general group.

To elaborate these findings for Research Question 1, the participants were also divided into four groups on the basis of their vocabulary test scores: (1) top in both (2) top in course-related vocabulary (3) top in general vocabulary and (4) bottom in both course-related and general vocabulary (Section 4.6).

The second stage in informing the use of curricular VLSs as a part of Research Question 1 was to use Kruskal-Wallis tests together with post-hoc comparisons to analyse if there were any significant differences between the adopted patterns of macro-curricular VLSs across the four progress groups of the participants. In this analysis, the broad two categories, macro-curricular VLSs were used for the comparisons, and no sub-categories under micro-curricular

were focused at this stage. The findings of this analysis are discussed in this section.

Kruskal-Wallis tests and post-hoc tests identified the significant difference between the adopted macro-curricular VLSs across the four progression groups. While the top in both group reported their use of macro-curricular VLSs as 'frequent' (M=2.46, SD=1.34), the top in general vocabulary (M=3.37, SD=0.86) and the top in course-vocabulary (M=3.35, SD=0.81) had higher mean values of adopted VLSs compared to the bottom in both (M=1.42, SD=0.90) group. Since the points in the Likert scale used in the VLS questionnaire were: 1=*Never*, 2=*Seldom*, 3=*Sometimes*, 4=*Often*, 5=*Always*, the results indicate that the top in both group used macro-curricular VLSs on the average of *sometimes.* The bottom in both group used these strategies on the average of *Never*. The top in course group used macro-curricular VLSs on the average of *Sometimes* to *Often.* Strikingly, like the top in course group, the top in general group also used the macro-curricular VLSs on the average of *Sometimes* to *Often.* The top in both group adopted macro-curricular VLSs with slightly lower mean compared to the top in course and the top in general group.

Finding 2 partially confirms Fan's (2003) discoveries, which also identified that the high scoring group used curricular VLSs (e.g., guessing strategies, dictionary strategies, meta-cognitive strategies) most frequently as compared to the lower scoring groups. Similarly, Davoudi and Chavosh (2016) also reported the different patterns of adopted curricular VLSs and identified that these strategies were most frequently used by the proficient learners in the Iranian ESL context. While

their study focused mostly only a few curricular VLSs (e.g., memory strategies rehearsal, encoding memory strategies), this study consolidated the finding with a larger number of curricular VLSs being reported by the same learners.

Finding 2, with the partial coherence with the above-noted studies provides new insights, as the current study found that curricular VLSs were frequently used by the three progress groups. The top in both group, the top in course group and the top in general group used curricular VLSs most frequently as compared to the bottom in both group (whose test scores for both course and general vocabulary were below the average). This indicates that the use of curricular VLSs is useful for enhancing both course and general vocabulary.

Finding 3: The results indicate that the top in both, the top in the course and the top in general group used macro-extra-curricular VLSs more than the bottom in both group. It appears that the bottom in both group did not use macro-extra-curricular VLSs. The top in general group used macro-extra-curricular VLSs more frequently than the top in course group. The top in both group used extra-curricular VLSs less frequently than the top in general and the top in course-related vocabulary group.

As with the analysis for curricular VLSs, Kruskal-Wallis tests and post-hoc comparisons with Bonferroni adjustment were then used at the second stage in answering Research Question 1. The analysis which compared four different progress groups indicated that there were significant differences in the adopted macro-extra-curricular VLSs between the four groups of the learners. The results

showed that the top in general vocabulary group (M=3.50, SD=1.25) used significantly more extra-curricular VLSs than the top in both (M=2.36, SD=1.43) and the top in the course (M=2.90, SD=1.28) and the bottom in both group (M=1.34, SD=0.94). Since the points in the Likert scale used in the VLS questionnaire were: 1=*Never*, 2=*Seldom*, 3=*Sometimes*, 4=*Often*, 5=*Always*, the results indicate that the top in both group used macro-extra-curricular on the average of *seldom* which is slightly near to *sometimes*. The bottom in both group used macro-extra-curricular VLSs on the average of *Never*. The top in course group used macro-extra-curricular VLSs on the average of *sometimes*. The top in general group used macro-extra-curricular VLSs on the average of *Sometimes* to *Often*, and the average use of extra-curricular was closer to *Often* than that of curricular VLSs.

As discussed in Chapter 2, Section 2.4.6, there are numerous sources (e.g., films, songs, TV programs, stories, the internet and novels (Schmitt, 1997; Alsaif and Milton, 2012)) for learning L2 vocabulary in addition to classroom input which is easy to find. *Finding 3* of the current study confirmed that Pakistani L2 learners used macro-extra-curricular VLSs, which also highlighted the usefulness of these strategies to learn vocabulary in addition to the curricular VLSs.

At this point on the basis of this finding, it appears that use of macro-curricular and macro-extra-curricular VLSs facilitated both course and general vocabulary gain during the twelve months' period of the study as these strategies were used more frequently by the three successful groups compared to the unsuccessful group. It also seems that macro-extra-curricular VLSs were more useful in

acquiring general vocabulary as compared to the course-related vocabulary. However, the findings so far also highlighted a few questions in relation to the adopted patterns of the top in both, the top in general and the top in course group. For example: 1) the top in general group used macro-curricular VLSs more than the top in both and the top in course-group but this group's course-related test scores were below the average, 2) the top in both group used macro-curricular and macro-extra-curricular VLSs less frequently compared to the top in course and the top in general group, but the top in both group's course-related and general vocabulary test scores were above the average showing that this group equally progressed in both course-related and general vocabulary. It appears that more frequent usage of macro-curricular VLSs may relate to the lower progress in course-related vocabulary. It also seems that the more frequent use of macro-curricular VLSs may refer to the lower progress in course-related vocabulary. The adopted patterns of the top in both, the top in general and the top in course will be further expanded and discussed in the next sections.

5.4.1.2 Use of micro-curricular VLSs

Finding 4: The current study found that sixteen micro-curricular VLSs were used by overall 578 Pakistani tertiary students to learn their course-related and general vocabulary with partially different frequencies.

Finding 4 seems consistent with the Finding 1, which also indicated that macro-curricular VLSs were frequently used by the overall 578 Pakistani tertiary students to learn their course-related and general vocabulary.

The second stage in informing learners' use of curricular VLSs as a part of Research Question 1 was to use the descriptive statistics of the VLS questionnaire responses of the 578 participants (Section 4.2.2.4). This time, all sub-categories under curricular VLSs were put forward for examination. The response results of curricular VLS questionnaire items reflected that the participants, on average, used selective-attention *Sometimes* (M=2.96, SD=1.39) and self-initiatives *Sometimes* (M=2.74, SD=1.49), therefore to the similar degrees, while selective-attention seemed to be used slightly more frequently on the average of *Sometimes*. On the average of *sometime,* dictionary strategies were also used for comprehension (M=2.99, SD=1.40) and to extend vocabulary knowledge (M=2.83, SD=1.28), such as, looking up the meaning of new words that were crucial to understanding the sentence, confirmation of the guessed meaning if it came again and again and looked examples of use in the dictionary. Dictionary strategies for comprehension seemed to be used slightly more frequently as compared to extended dictionary strategies. On the average of *sometimes*, students applied rehearsal memory strategies such as using word lists (M=2.60, SD=1.26) and oral and visual repetition (M=2.66, SD=1.28) such as integration of definitions of unknown words into the context where these were found and making notes to distinguish between the meanings of two words were the most used rehearsal memory strategies. Encoding strategies such as

association and imagery (M=2.66, SD=1.29), visual encoding (M=2.66, SD=1.30), auditory encoding and word structure (M=2.66, SD=1.31), semantic encoding (M=2.61, SD=1.28) and contextual encoding (M=2.70, SD=1.32) for example creating a mental image of the new word to remember it. The mean of adopted encoding strategies is very similar across the 5 sub-categories, at the average of *sometimes*. The usage of guessing strategies using background knowledge (M=2.84, SD=1.32) and linguistic cues (M=2.81, SD=1.31) such as looking for any definition in the passage that would support the guess about the meaning of a word and finding expressions in the passage that would support the guess about the sense of a new word were reported with the average of *sometimes*. The students also used activation strategies (M=2.86, SD=1.365), such as using already learnt vocabulary in oral and written communication and coursework, on the average of *sometimes*. Similarly, the meaning-oriented (M=2.72, SD=1.31) and usage oriented (M=2.72, SD=1.39) note-taking strategies, e.g., making notes when meeting new useful expressions or phrases and noting down examples of usage were also adopted by the participants.

The current study found that sixteen micro-curricular VLSs were used by overall 578 Pakistani tertiary students to learn their course-related and general vocabulary with partially different frequencies. This finding is partially coherent with the previously conducted studies (Gu and Johnson, 1996; Fan 2003). These studies identified that learners use a variety of curricular VLSs to learn their vocabulary. Gu and Johnson (1996) surveyed Chines undergraduates to determine the adopted VLSs and their relationship on receptive vocabulary

learning and overall English proficiency. His findings revealed that all 850 focused students used the sixteen micro-curricular VLSs with more and less the same frequencies. Fan (2003) found out the same results as Gu and Johnson's (1996) in his quantitative survey. However, this study did not focus both course-related and general productive vocabulary learning. The finding of the current study expanded the results of above-noted studies and indicated that Pakistani ESL learners also use a variety of micro-curricular VLSs to learn their general and course vocabulary.

The current study further investigated this issue by using multiple methods. The descriptive statistics also revealed that the mean values of adopted curricular VLSs of the three groups (the top in both, the top in general- and the top in the course-vocabulary group) were not strikingly dissimilar to each other since their gain in vocabulary were strikingly dissimilar. Interestingly, while their mean values of adopted curricular VLSs were quite similar, their learning outcomes were not similar. It (Finding 2, Finding 3) raised a question which is addressed below in the light of analyses of weekly diary reports and interviews. Diary reports and interview response data indicated different patterns of the curricular-VLSs at a micro level adopted by the four groups. It also reveals that the used self-initiative and selective-attention strategies towards using micro-VLSs were also quite different across the four groups of learners.

Findings of diary reports and thematic analysis on interview responses data also confirmed the questionnaire findings summarised above. However, the interview comments elaborated on these findings about the learners' use of curricular VLSs

and provided further insights in several ways. Results and discussions on each of sub-categories under the curricular VLSs investigated are provided below.

Finding 5: Guessing strategies seem to be more used by the successful learners (top in both, the top in course, the top in general) as compared to unsuccessful (the bottom in both) learners. It also identified that guessing strategies are used mainly to learn course vocabulary by the top in course group and to learn mainly general vocabulary by the top in general group.

Most of the top in both, the top in course-vocabulary and the top in general-vocabulary group participants always guess the meaning first when any unknown word occurs in text or while talking to others. Most of them also reported that they noted down the newly guessed words for further learning. The top in course group indicated that they applied guessing strategies while learning their course-related vocabulary and the top in general group stated that they used guessing strategies mainly in relation to learn general vocabulary. By contrast, the bottom in both group tended to ask fellow students and teachers for the meaning and two-thirds of the bottom in both noted that they consulted a dictionary to check meaning straightaway. Similar to quantitative findings, interview data revealed that the group of learners who seemed to have progressed both in course- and general-vocabulary used a variety of guessing strategies. Discovery strategies of guessing may facilitate these successful learners to gain knowledge of new words at the initial stages of learning.

Finding 5 echoes the reports of previous studies (Gu 2003a; Fan, 2003) which also identified the usage of guessing strategies by the high-achievers. Gu (2003a) conducted a case study on two Chinese EFL learners and reported that high-achiever learner used guessing strategies more frequently as compared to the low-achiever learner. Similarly, Fan (2003) also reported that high scoring group used guessing strategies along with other VLSs. This study confirmed their findings, as well as identifying the use of guessing strategies for learning both the course and general vocabulary.

Finding 5 identifies that most of the top in both group used guessing strategies to enhance their course and general vocabulary knowledge. Guessing strategies also seemed to be used by the top in course group and the top in general group to a similar percentage. However, the number of students of these two groups reported their less frequent use of guessing strategies than the top in both group. The top in the course and top in general group showed partially similar patterns of adopted guessing strategies, but their vocabulary gain was not similar. Interestingly, thematic analysis of interview responses indicates that the top in course group used guessing strategies mostly to learn course vocabulary and the top in general group focused these strategies on learning mainly general vocabulary. On the other hand, the bottom in both group preferred to ask teachers and fellow students instead of applying guessing strategies as they perceived that using guessing strategies will waste their time.

Finding 6: The successful learners (the top in both, the top in course, the top in general) used a variety of **dictionary strategies** to learn the course and general

vocabulary indicating the usefulness of dictionary strategies in learning course and general vocabulary. The top in course group used dictionary strategies to learn mainly course vocabulary, and the top in general group used these strategies to learn general vocabulary mainly. The unsuccessful learners (the bottom in both) seemed to be the least user of dictionary strategies as compared to the successful learners.

Mostly all of the top in both, the top in the course and the top in general group used dictionary strategies to confirm the guessed meaning and to get detailed information about the new vocabulary items to prepare notes and further learning. However, the top in both seems more frequent user of guessing strategies. These three groups revealed a variety of their aims of using dictionary strategies. They pointed out that they used dictionary strategies to confirm the guessed meaning, to prepare their vocabulary notes, to check the meaning of the unknown word, and to learn the detailed information of the target word, e.g., synonyms, antonyms, sentence use, grammar. Dictionary strategies were also used by the bottom in both group, but their use of dictionary seemed to be rather limited to checking the meaning of a new word.

Finding 6 seems to be partially consistent again with the previous studies (Gu and Johnson, 1996; Gu, 2003a; Fan 2003). For example, Gu and Johnson (1996) informed dictionary strategies as the positive predictor of vocabulary size and general proficiency. Similarly, Gu(2003a) and Fan (2003) identified that dictionary strategies were used by the higher- achievers. In addition to confirming these findings, this study additionally offered further insights into the

adopted patterns of guessing strategies of the course and general vocabulary progression.

Finding 6 provided new insights by discovering the adopted patterns of dictionary strategies across the four progress groups focusing course and general vocabulary. *Finding 6* identifies that the top on both, the top in the course and the top in general group used dictionary strategies along with other VLSs. However, the percentage of the top in both group seems to be higher than the other two groups. The top in the course and the top in general used these strategies to the similar percentage. However, the top in course group used these strategies to learn mostly course vocabulary, and the top in general group used these strategies to learn mostly general vocabulary. The bottom in both group used dictionary strategies but just to check the meaning of a new word. They did not use dictionary strategies to confirm their guessed meaning or to prepare their notes for further learning which probably indicated their lowest performance in the course and general vocabulary tests as compared to the other three groups.

Finding 7: Note-taking strategies such as meaning-oriented note taking and usage-oriented note taking are used by the successful learners (the top in both, the top in course, the top in general) to learn their course and general vocabulary. The top in course group used these strategies to learn mainly course vocabulary, and the top in general group used these strategies to learn general vocabulary. The unsuccessful learners (the bottom in both group) used meaning-

oriented note taking only where they note down the meaning of a new word in the margin of their course-books.

Most of the top in both group used meaning-oriented and usage-oriented note-taking strategies to learn both general and course-related vocabulary. As compared to the top in both group, the top in general and the top in course group seem less frequent in using these strategies.

The other differences between these three groups were that most of the top in both group used note-taking strategies to learn both general and course-related vocabulary. In contrast, the top in general group reported that they applied these strategies only to prepare notes for general vocabulary. Similarly, the top in the course-vocabulary group applied note-taking strategies only to learn course-related vocabulary. The bottom in both group was the least user of note-taking strategies and only used to write down the meaning of a word in the margin of books.

Finding 7 is partially in line with Gu and Johnson (1996), Gu (2003a), Fan (2003), confirming the relationship of note-taking strategies with vocabulary progress. In addition to consolidating their quantitative findings, this research with a longitudinal, mixed methods approach has also highlighted the in-depth details of the applied note-taking strategies to learn course-related and general vocabulary.

The findings of interview data, echoing diary reports, indicated the in-depth differences in the adopted note-taking strategies between the four progress

groups of the learners. The top in both group used note-taking strategies to learn both course and general vocabulary and prepared meaning- and usage-oriented vocabulary notes to keep the record of words, to memorise and revise them to enhance their vocabulary knowledge. The similar patterns were seemed to be used by the top in the course and the top in general group, but the findings revealed that the top in both group used note-taking strategies more frequently as compared to the other three group. Other differences also lied in their meta-cognitive strategies in relation to their note-keeping. For example, the top in both, the top in the course and the top in general group used these strategies with the collaboration of other VLSs which was lacked by the bottom in both group.

Finding 8: The successful learners (the top in both, the top in course, the top in general) used **memory strategies** rehearsal and encoding to learn the course and general vocabulary more frequently than the unsuccessful learners to learn their course and general vocabulary. The top in course group used these strategies to learn mainly course vocabulary, and top in general group used these strategies to learn general vocabulary. The unsuccessful learners (the bottom in both) seemed to be used less frequent users the memory strategies.

The top in both group used a variety of memory rehearsal and encoding strategies to learn both general and course-related vocabulary. They used rehearsal, revision of vocabulary, memorization of vocabulary lists. The top in both group also used encoding strategies, e.g., contextual encoding, association and imagery and visual encoding. Similarly, the top in general and the top in the

course-vocabulary group also used memory and encoding strategies but less frequently.

The bottom in both group was the least user of memory and encoding strategies. Unlike the other three groups, only one-third of them used oral and visual repetition to rehearse the new words. They did not use a variety of memory and encoding strategies, and their memory strategy usage seemed very limited.

The current study partially confirms the usefulness of memory strategies (rehearsal and encoding) as reported by Schmitt (1997), Sener (2006) and Davoudi and Chavosh (2016). Davoudi and Chavosh (2016) found that memory strategies were used by the advanced students to learn the English language. Schmitt (1997) identified the usefulness of memory strategies on the knowledge of vocabulary breadth and depth in his survey of Japanese students. Sener (2006) also found that memory strategies were used mostly by the high proficiency learners predicting the usefulness of these strategies on vocabulary size. While these studies all used only quantitative approach, the current study also confirmed these findings from multiple data sources collected in the mixed methods study.

The interview comments provide further insights into the findings of the VLS questionnaire and the diary reports on memory rehearsal and encoding strategies. The quantitative findings revealed that memory strategies (e.g., association and imagery) seem to be useful in the acquisition of course-related vocabulary. Interview data showed that the top in both, top in the course and

top in general vocabulary group used a variety of micro-memory and encoding strategies. It might be the case that association and imagery work better if they are used along with all of the memory and encoding strategies. The bottom in both group who was the least progressed group used only limited micro-memory and micro-encoding strategies in isolation.

Finding 9: Deliberate activation strategies are used for the retrieval of both course and general vocabulary by the successful learners (the top in both, the top in course, the top in general) more often than the unsuccessful learners (the bottom in both). It appears that these strategies are used to learn course vocabulary by the top in course group, whereas the top in general group used these strategies to retrieve their general vocabulary mainly. The unsuccessful learners (the bottom in both group) used these strategies less frequently.

The *finding 9* shows that deliberate activation strategies are beneficial in learning course and general vocabulary. All participants in the top in both and almost all of the top in the course and the top in general vocabulary participants applied activation strategies to activate their vocabulary. Interestingly the top in both, and the top in course vocabulary group used the similar macro- and micro-activation strategies. However, the top in both group progressed greatly in both general and course vocabulary, whereas the top in course group showed great progress in course-related vocabulary. This group had also shown some progress in general vocabulary, but it was just less than the average.

Finding 9 of the current study confirms the study of Gu and Johnson (1996), who also indicated deliberate activation strategies were found useful in vocabulary size and general proficiency. The current study expanded this finding by elaborating the adopted patterns of activation strategies across the four progress groups.

The findings of the diary reports and interview seem to indicate that though both of these groups used the similar activation strategies, their patterns of self-initiative and selective-attention were different from each other. That is, the top in both group used VLSs to learn both general and course-related vocabulary, while, the top in course group used VLSs mostly to learn course-related vocabulary. The difference in their meta-cognitive decision seemed to lead to the different progress levels in the two types of vocabulary.

5.4.1.3 Use of micro-extra-curricular VLSs

Following the research findings informing the use of macro-curricular VLSs, macro-extra-curricular VLSs and micro-curricular VLSs by the Pakistani university students of the study, this section summarises and discusses the patterns of applied micro-extra-curricular VLSs by the participants of the study.

Finding 10: Different types of micro-extra-curricular VLSs were on average used more or less to the similar degrees by the overall 578 Pakistani tertiary students to learn the course and general vocabulary. It appears that reading English newspaper and magazines, watching English movies and TV programmes, listening to English music and sports commentary, and participating in out of

class activities where the mode of communication was English seemed to be used slightly more frequently than that of the extra-curricular VLSs.

The second stage in informing to the learners' use of extra-curricular VLSs as a part of Research Question 1 was to use the descriptive statistics of the VLS questionnaire responses of the 578 participants (4.2.2.5). This time, all sub-categories under extra-curricular VLSs were put forward for examination.

The results of descriptive statistics revealed that participants frequently used micro-extra-curricular VLSs. The participants' responses revealed that students were exposed to English press, such as reading English magazines (M=2.68, SD=1.59), and reading English newspaper (M=2.70, SD=1.60). They were also exposed to English media, such as watching English movies (M=2.76, SD=1.62), watching TV programmes (M=2.71, SD=1.59), listening to English music (M=2.68, SD=1.62), watching programmes with tele-text/subtitles (M=2.57, SD=1.60), watching English News (M=2.54, SD=1.59), watching matches and listening to English commentary (M=2.71, SD=1.63), and listening news on radio (M=2.37, SD=1.59). They were also involved in social interaction such as having interaction with native speakers of English (M=2.44, SD=1.59) and taking part in activities where the mode of communication was English (M=2.66, SD.1.67).

The reported responses of students indicate that they used the above noted informal strategies, named as extra-curricular VLSs, to learn their vocabulary. This finding is in line with the Finding 1 which also indicated the usage of (macro) extra-curricular VLSs by Pakistani tertiary students. The students used these

strategies to the similar degrees with the average of *sometimes.* However, reading English newspaper and magazines, watching English movies and TV programmes, listening to English music and sports commentary and participating in out of class activities where the mode of communication was English seemed to be used slightly more frequently than that of the extra-curricular VLSs.

As reviewed in Chapter 2, the research in the past focused only on individual extra-curricular VLSs (Maley, 1987; Strevens, 1987; Milton and Meara, 1995; Grab and Stoller 1997; Schmitt, 1997; Schmitt, 2000; Harris and Snow, 2004) and hardly any study has been carried out focusing on the group of the micro-extra-curricular VLSs as a whole. The current study contributed the literature by finding the eleven micro-extra-curricular VLSs used by successful learners from Pakistan to learn specifically general vocabulary. *Finding 10* indicated the new perspectives of the usefulness of these strategies by exploring the adopted micro-extra-curricular VLSs across the four progress groups. It appears that there is a link between an appropriate use of these strategies and vocabulary gain, particularly in general vocabulary.

Finding 11: Micro-extra-curricular VLSs are used more often by the successful learners compared to the unsuccessful learners to learn the course and general vocabulary. The top in general group used these strategies to learn mainly general vocabulary (though this group also used micro-curricular VLSs as well to learn general vocabulary but underestimated the use of micro-curricular and micro-extra-curricular VLSs to learn course-related vocabulary), and the top in course group mainly used these strategies to learn course vocabulary.

The quantitative findings were supported and more elaborated by the diary and interview responses, and they all suggested that using a variety of extra-curricular VLSs, (such as reading English magazines, reading English newspapers, watching English movies/plays, watching English programmes, listening to English music, watching programmes with English sub-titles, watching and listening news on TV, watching matches and listening to English commentary, listening to news on radio, native speakers' interaction and by out of class events participation) seem to be beneficial in learning general vocabulary.

It seems that these extra-curricular VLSs turned out to be more useful to learn general vocabulary compared to the course vocabulary as the top in general group used these strategies more frequently than the course vocabulary group. On the other hand, the bottom in both group did not realise the usefulness of these strategies in learning vocabulary and perceived that the use of extra-curricular VLSs would waste their time. This indicated the cause of their least course and general vocabulary gain.

As noted in the literature review, the effectiveness of listening songs for enhancing vocabulary learning has been demonstrated by researchers such as Maley, (1987), Strevens, (1987) and Milton, (2009). The qualitative findings of the current study also reported the usefulness of songs and watching movies with sub-titles in learning general vocabulary as these techniques were used by the successful learners. This confirms the findings of Milton's (2008) case study on a low intermediate learner's vocabulary learning, as well as another case

study of his (Milton, 2008) on the impact of watching a film with subtitles on a learner's vocabulary acquisition.

The finding of the thematic analysis seems to be partially consistent with the case study of Stoller (1997) on the influence of reading newspaper, watching TV programmes, using a dictionary, note-taking, memory and activation strategies to learning L2. He also prepared his notes as forty words each day. His study identified the progress of vocabulary within five months' period.

In addition, the participants in the top in both and the top in general group also reported their frequent interaction with native speakers by video conferencing and out of class events where the mode of communication was English to learn and improve English vocabulary. This also echoes the findings of Milton and Meara (1995), who demonstrated social interaction with native speakers a useful source to learn vocabulary. The findings of their study show that non-native-speakers registered in an English Spoken Country University gained 1325 vocabulary items by having social interaction with native speakers of English and within six months.

The findings of the above-noted studies in this section were mostly focused individual extra-curricular VLSs. It is important to note that the findings of the current study highlight the usefulness of all of these extra-curricular VLSs in the acquisition of general vocabulary. It also contributed the fact that these informal strategies seem more facilitating to learning general vocabulary than course-related vocabulary.

5.4.1.4 Use of meta-cognitive strategies

Finding 12: Meta-cognitive strategies are often used by the successful learners to learn the course and general vocabulary. The least successful learners (the bottom in both) seemed the least user of these strategies. The students whose course vocabulary gain was above the average but the general gain was below the average used meta-cognitive strategies to learn mainly the course vocabulary. The learners whose vocabulary gain of general vocabulary was above the average but the course vocabulary gain was below the average used meta-cognitive strategies primarily to learn general vocabulary.

The findings of the current study about the meta-cognitive strategies, such as self-initiative and selective-attention in relation to RQ1 identify that these strategies were frequently used by the Pakistani students to learn their course and general vocabulary. The use of selective-attention was slightly more than the use of self-initiative. This finding was consistent with the findings of Safian, Malakar and Kalajahi (2014) who also discovered that Malaysian EFL university students use meta-cognitive strategies frequently to learn their vocabulary. In addition, the current study has also provided new insight, regarding the different use of meta-cognitive strategies across different progress groups of learners. Findings of diary reports and thematic analysis of interview expand this by indicating the adopted patterns of these strategies across the four-progress group of learners.

Findings of structured weekly diary reports also revealed several differences in the adopted patterns of curricular VLSs across four progress groups. The results

showed that participants' self-initiatives and selective-attention played a significant role in their vocabulary learning. The top in both group applied curricular and extra-curricular VLSs to learn both general and course-related vocabulary. The top in both group applied self-initiatives and selective- attention about using specific VLSs while doing their independent vocabulary learning focusing both general and course-related vocabulary. Their use of self-initiative and selective-attention suggested their balanced approach towards vocabulary learning. The top in both group believed that using a mixture of all the VLSs was the best approach to vocabulary learning.

The bottom in both group seemed to be overly dependent on their English teachers and syllabus. The bottom group reported that they applied a very few VLSs and in isolation; for instance, using just dictionary strategies or just guessing strategies. This group believed that this was the best method and best strategy to learn English vocabulary. They were using VLSs if their teachers suggested their use of particular strategies. It indicates their dependent approach and their lack of self-initiative and selective-attention towards using VLSs to learn vocabulary.

The top in general-vocabulary group used self-initiatives and selective-attention towards their independent learning of general vocabulary. The top in general-vocabulary group used English media, English press and English exposure as the main strategy to learn English vocabulary. They also used other curricular VLSs such as guessing, note-taking, dictionary, memory, encoding and activation strategies as well to learn and memorise vocabulary exposed by these modes.

Surprisingly, their interview responses also revealed that these learners applied a limited usage of curricular and extra-curricular VLSs to learn course-related vocabulary. Therefore, their approach towards adopted VLSs was not balanced as they used VLSs mostly to learn general vocabulary.

The top in the course-vocabulary seemed to be using meta-cognitive strategies (self-initiatives and selective attention) mainly to learn course-related vocabulary. This group of learners used extra-curricular VLSs only to a limited degree. They applied independent learning of course-related vocabulary. They used a mixture of VLS, though just to learn course-related vocabulary and to pass their English exams.

The finding of this study in relation to RQ1 highlighted a few other factors which are found in the study. They include the active role of an appropriate usage of self-initiative and selective-attention, planning, independent time management to use VLSs, self-awareness regarding the usefulness of VLSs and self-monitoring to learn vocabulary. This confirms the findings of previous studies (Ahmad, 1989; Sanaoui, 1995; Kojic and Lightbown, 1999; Schmitt, 2000; Fan, 2003;). Ahmad (1989), Sanaoui (1995) and Schmitt (2000) found that meta-cognitive strategies play a significant role in vocabulary learning. They discovered that successful learners used meta-cognitive strategies (e.g., applied a variety of strategies, regular usage of rehearsal, encoding and retrieval including note-taking) to plan and manage their vocabulary learning. Kojic and Lightbown (1999) and Fan (2003) also found the link between vocabulary high scores and use of meta-cognitive strategies. They found that successful learners use these strategies

more frequently compared to the unsuccessful learners. Confirming these findings, the current study also suggested the usefulness of meta-cognitive strategies in the learning of course and general vocabulary in Pakistani tertiary context.

Thus far, the findings of the research from multiple sources on the learners' adopted patterns of curricular and extra-curricular VLSs were summarised, synthesised and discussed to address Research Question 1. The next section will summarise and discuss the results that inform Research Question 2, which is on the impact of curricular and extra-curricular VLSs on the learners' lexical gain.

5.4.2 Summary of results for Research Question 2

RQ2. What is the impact of the curricular and extra-curricular VLSs on vocabulary gain in Pakistani ESL context?

5.4.2.1 Impact of macro-curricular and macro-extra-curricular VLSs

Finding 13: Macro-curricular VLSs appeared to be useful to learn both (productive) course-related and general vocabulary. Micro-curricular VLSs seemed to facilitate the learning of course-related vocabulary greatly. To enhance productive knowledge of general vocabulary, both macro-curricular and macro-extra-curricular VLSs were useful. However, as compared to both, macro-extra-curricular VLSs seemed to be more efficient in learning and gaining productive knowledge of general vocabulary.

This question required an analysis of the multiple regression to understand the impact of VLSs on vocabulary progression of the learners. To gain the productive

knowledge of general vocabulary, both macro-curricular and macro-extra-curricular VLSs proved to be positive predictors, but the macro-extra-curricular VLSs predicted the progress on general vocabulary much better (Section 4.5.1). Finding 2 and 3 also indicated the usefulness of curricular and extra-curricular VLSs to learn general vocabulary as the top in general group (whose general vocabulary test scores were above the average) used macro-curricular and extra-curricular VLSs most frequently compared to the other three groups. It indicates that the top in general group used curricular and extra-curricular VLSs to learn the general vocabulary.

The findings of diary reports and thematic analysis of interviews showed that the top in both group used a combination of micro-curricular VLSs with the mixture of extra-curricular VLSs to learn the course and general vocabulary. The top in both group progressed both in course-related, and general vocabulary and their test scores were above the mean for both of the course and general vocabulary. As reviewed in Section, 2.2.3, curricular VLSs, such as guessing, dictionary and note-taking play a vital role in learning vocabulary at the initial level. The memory, encoding and activation strategies facilitate the learning from receptive to productive. It proposed that using a combination of each micro-curricular VLS can be facilitating in enhancing the productive knowledge of the course and general vocabulary.

Finding 14: Macro-extra-curricular VLSs seemed to be useful in learning general vocabulary, while they appeared to have a negative impact on learning of course-related vocabulary.

The analysis revealed that for course-related vocabulary progress, macro-curricular VLSs turned out to be a significant positive predictor, while macro-extra-curricular VLSs emerged as a significant negative predictor (Section 4.5.2).

The results highlighted that macro-curricular and macro-extra-curricular are useful to learn general vocabulary. The current study highlighted that macro-curricular VLSs are useful to learn course-related vocabulary. However, the macro-extra-curricular VLSs seem to have an adverse effect on the learning of course-related vocabulary. It seems in line with the Finding 2 and Finding 3 which also indicated that the top in general vocabulary group used macro-extra-curricular VLSs more frequently than the top in both and the top in course-related vocabulary group. However, this group's progress in course-related vocabulary was below the mean. Apparently, this finding confirmed the Finding 14, indicating that extra-curricular VLSs seemed not to be useful to learn course-related vocabulary. However, these strategies seemed effective in gaining general vocabulary.

Diary reports and thematic analysis found that top in course group perceived that their main focus should be in learning course-related vocabulary and due to this they used both macro-curricular and macro-extra-curricular VLSs mainly to learn course vocabulary. They used macro extra-curricular VLSs to learn general vocabulary to some extent as well. However, they did not use macro-curricular VLSs to learn general vocabulary. For example, they used English media, press and social exposure to learning general vocabulary but they did not prepare notes of general vocabulary. They used guessing strategies while reading

newspapers but they did not confirm their guesses by using dictionary strategies. They did not memorise or encode general vocabulary. They reported that they focused curricular and extra-curricular VLSs to learn mainly course-related vocabulary. On the other hand, the top in general group perceived that they should focus mainly to improve general vocabulary and for this purpose, they used curricular and extra-curricular VLSs to learn mainly general vocabulary. Where the top in course group underestimated the significance of using the mixture of both curricular and extra-curricular VLSs to learn general vocabulary, the top in general underestimated the importance of learning course related vocabulary and using a mixture of strategies to learn course-related vocabulary as well. These facts might be the cause of this result.

Finding 13 and 14 suggest that while extra-curricular VLSs played an active role only in the progress of general vocabulary, curricular VLSs contributed positively to the advancement of both general and course-related vocabulary. Strikingly, this result seems dissimilar with the RQ1 findings, in which the successful learners on general vocabulary suggested their use of extra-curricular VLSs as well as curricular VLSs more frequently than the other three groups. In addition, interview responses indicated that some of the learners who succeeded mainly in general vocabulary tended to value only general vocabulary and underestimate the importance of course-related vocabulary. These learners reported that they focused on course-related vocabulary only inside the classroom and they mostly focused on general vocabulary in out-side-the class activities. They used curricular and extra-curricular VLSs to learn mainly general

vocabulary. This seems to explain why the use of extra-curricular VLSs was a significant, negative predictor of the progress of course-related vocabulary.

5.4.2.2 Impact of micro-curricular VLSs

Finding 15: Self-initiatives and selective-attention are usefulness to enhance the productive knowledge of general vocabulary. Selective-attention, dictionary strategies for comprehension, memory strategies encoding (association and imagery) appeared to be beneficial in learning course vocabulary. In other words, to gain the productive knowledge of course-related vocabulary, three micro-curricular VLSs, e.g., selective-attention, dictionary strategies for comprehension, and memory strategies encoding (association and imagery) seem to be useful, whereas self-initiatives and selective-attention are significant in enhancing the productive knowledge of general vocabulary (Section 4.5.3).

When the impact of micro-curricular VLSs was examined, selective-attention, dictionary strategies for comprehension, memory strategy encoding (association and imagery) turned out to be positive predictors of overall course-related vocabulary gain (Section 4.5.4). In contrast, the semantic encoding, and usage oriented note-taking strategies emerged as significant but negative predictors of overall course-related vocabulary gain (Section 4.5.4). This indicates that selective-attention, dictionary strategies for comprehension, association and imagery can be valuable in enhancing the productive knowledge of course-related vocabulary.

Diary reports and thematic analysis of interview revealed that the least progress group (the bottom in both) did not use a mixture of curricular and extra-curricular VLSs. Though this group mainly focused course-related vocabulary but they did not apply guessing strategies, dictionary strategies and note-taking strategies to learn their course vocabulary. They preferred to ask teachers or fellow students for meaning and seemed to be a less frequent user of the dictionary to understand more in detail about these new words or to prepare notes for further learning. They believed in rote learning and used rehearsal memory strategies and encoding strategies to memorise vocabulary lists provided in their course books. As reviewed in Section 2.2.3, which indicates that *attention* is equally important for long-term learning and retrieval. It appears that guessing strategies, dictionary strategies, and note-taking strategies are useful in learning receptive vocabulary. It also indicates that to make memory and encoding strategies effective in learning vocabulary, the first step is attention towards the meaning and definition of the word which can be achieved through guessing strategies and dictionary strategies. If learners use memory strategies without understanding the word, it's similar to rote learning, it might save newly learnt vocabulary in sensory memory which can fade away rapidly. As the unsuccessful learners seem to be using rote learning without understanding their usage of memory and encoding strategies, the effects of these strategies on their learning seem adverse.

5.4.2.3 Impact of micro-extra-curricular VLS

Finding 16: Micro-extra-curricular VLSs, e.g., reading English magazines and participating in out-of-class events where the mode of communication was English seem to be the most valuable in learning general vocabulary from the eleven micro-extra-curricular VLSs group. On the other hand, to learn course-related vocabulary, out-of-class events where the mode of communication was English seemed to be the only useful micro-extra-curricular VLSs.

Quantitative analysis (Section 4.5.5, 4.5.6) revealed that for the micro-extra-curricular VLSs, reading English magazines and participating in out-of-class events where the mode of communication was English turned out to be positive predictors of overall general vocabulary gain. Out of class events turned out to be the positive predictor of course-related vocabulary.

The findings of the study in relation to answering RQ2 confirms the findings of the previous study (Milton and Meara, 1995) which indicated the positive impact of social interaction on vocabulary learning. As noted in Section 2.6, since, there is hardly any mixed methods longitudinal research conducted on overall ESL context or on Pakistani students, this study consolidated those previous findings by demonstrating the impact of curricular and extra-curricular VLSs on gaining the productive knowledge of the course and general vocabulary in the particular Pakistani ESL context.

To sum up, the findings of RQ2 contributed to the literature by highlighting that macro-curricular VLSs are useful to learn and enhance the productive knowledge

of course-related and general vocabulary. It also indicated that macro-curricular VLSs are more helpful in learning course-related vocabulary compared to the general vocabulary.

The quantitative findings also highlighted that extra-curricular VLSs are useful in learning and developing the productive knowledge of only general vocabulary. Findings of diary reports and thematic analysis of interview revealed that it might be because these learners, who wanted to improve general vocabulary valued extra-curricular VLSs and general vocabulary and underestimated the importance of course-related vocabulary. So, they spent much more time on general vocabulary learning which could have the cause of this result. On the other hand, the top in course group underestimated the significance of learning general vocabulary and using extra-curricular VLS with the other curricular VLSs to learn general vocabulary.

Rather than extra-curricular VLSs being generally disadvantageous, in the acquisition of course-related vocabulary, extra-curricular VLSs were just used by those who do not appreciate course-related vocabulary. The relationship shown by multiple regression analysis illustrates that extra-curricular VLSs are not useful to learn course-related vocabulary, suggesting that extra-curricular VLSs should not be used to learn course-related vocabulary. Perhaps it is not like that, and it may be because of those who used more extra-curricular VLSs to learn general vocabulary and underestimated the value of course-related vocabulary. The students who progressed in both course-related and general vocabulary, they used both of curricular and extra-curricular VLSs to learn course-related and

general vocabulary. The top in general group used curricular VLSs and extra-curricular VLSs to learn mainly general vocabulary. However, the top in course group used curricular and extra-curricular VLSs to learn mainly course-related vocabulary. Their vocabulary test scores showed that their test scores in course-related vocabulary were above the mean, but their test scores in general vocabulary were below the mean. Though this group showed progress in general vocabulary as well, but their progress in course vocabulary was much higher. This indicates that the top in course group and the top in general group learners were not fully trained to take self-initiatives and selective-attention towards using a combination of vocabulary learning strategies appropriately which answers the raised questions in Section 5.4.1.1.

The results from quantitative perspective seem at a superficial level. It seems that learners who used the extra-curricular VLSs more frequent, the worst they did in course-related vocabulary. To learn course-related vocabulary, extra-curricular VLSs should never be used as proposed by the quantitative perspective.

It might be not that straightforward, and that is a superficial suggestion made by quantitative analysis. Findings of diary reports and thematic analysis of interview suggested that extra-curricular VLSs should be used in conjunction with the curricular VLSs. Indeed, that is what top in both group did. Those who progressed only in general vocabulary underestimated the value of course related vocabulary, so it's not extra-curricular VLSs per se is wrong, it may be the use of

extra-curricular VLSs should be more complexed and more combined with meta-cognitive and curricular VLSs.

The Finding also emphasised that selective-attention, dictionary strategies for comprehension, memory encoding strategies (association and imagery) were useful in learning and gaining course-related productive vocabulary. Self-initiatives and selective-attention (meta-cognitive strategies) were highlighted as useful strategies in gaining general vocabulary knowledge.

The findings of current study seem to be partially consistent with the study of Gu and Johnson (1996), who found that self-initiative, selective-attention, memory strategies, and dictionary strategies put a positive effect on vocabulary size and general proficiency. Gu and Johnson's (1996) study explored the patterns of curricular VLSs in relation to the vocabulary size and general proficiency in Chinese EFL context. The current study expanded his findings by highlighting the usefulness of these strategies in vocabulary learning in Pakistani ESL context. The current study also identified the usefulness of curricular VLSs on the course and general vocabulary learning, and usefulness of extra-curricular VLSs on general vocabulary in ESL context.

The current study highlighted that reading English magazines and participating in out of class events where the mode of communication (social interaction) was English appears to be helpful in general vocabulary gain.

The current study found that learners used out of class events where the mode of communication was English that seemed to be a source of general vocabulary

input. These learners tended to communicate in English and improve their knowledge by having social interaction with others during these events. This finding is partially consistent with the Milton and Meara (1995). They found that International students increased their vocabulary by interacting socially with others. However, their study did not identify the impact of social interaction on the course and general productive vocabulary gain.

The quantitative findings with the collaboration of diary reports and thematic analysis of interview results depicted more elaborated description of the adopted VLSs indicating their individual and collaborated impact on course-related and general vocabulary gain.

The structured weekly diary reports of vocabulary learning and interview responses revealed that the group of students who significantly progressed in both general and course-related vocabulary (the top in both group) used macro-curricular and macro-extra-curricular VLSs to learn both the course and general vocabulary. They also applied a variety of micro-curricular and micro-extra-curricular VLSs in combination. Their balanced vocabulary learning approach by using a mixture of strategies seemed the most efficient way of learning vocabulary.

On the other hand, the top in general group used macro-curricular and macro-extra-curricular VLSs to mainly learn general vocabulary, whereas the top in course group applied macro-curricular and macro-extra-curricular VLSs to learn mainly course-related vocabulary. The top in general group gained substantial

progress in general vocabulary, and their course-related vocabulary scores were below the average. Their excessive focus on general vocabulary using extra-curricular VLSs while underestimating the importance of course-related vocabulary seem to explain the counter-intuitive result obtained in the multiple regression analysis, that is, why the use of extra-curricular VLSs worked negatively towards the progress of course-related vocabulary.

On the other hand, the top in course group who progressed in course-related vocabulary, and their general vocabulary scores were below the average, used curricular and extra-curricular VLSs to learn mainly course-related vocabulary. They used extra-curricular VLSs to learn general vocabulary as well but without combining these strategies with curricular VLSs.

The triangulated findings of quantitative and qualitative data suggest the positive impact of curricular VLSs on course-related and general vocabulary gain, and the positive impact of extra-curricular VLSs on general vocabulary gain. The study also suggests that the collaborated approach of using both curricular and extra-curricular VLSs with meta-cognitive strategies may play a major role in the successful learning of vocabulary in Pakistani tertiary ESL context.

Chapter 6: Conclusion

6.1 Introduction

This study explored the adopted vocabulary learning strategies (VLSs) and the impact of these strategies on lexical gain.

Chapter 1 highlighted the introduction of the study. The review of literature presented in Chapter 2 proposed that previous studies on VLSs have tended to deal with either individual or a small number of strategies with very few studies looking at a group of strategies. To the knowledge of the researcher, no research has been carried out on the impact of curricular and extra-curricular VLSs on vocabulary gain in a Pakistani university students' context and overall ESL context. This study is therefore designed to explore VLSs and their effects on vocabulary gain in a Pakistani tertiary context to partially fill such a gap in the literature. The quantitative findings of the VLSs and vocabulary tests were presented in Chapter 4. The quantitative findings of diary reports and thematic analysis of interview response-data were presented in chapter 5. Finally, the findings of the current study were summarised and synthesised in Chapter 5, Section 5.4. These results were then discussed in relation to the two Research Questions of the study as well as the existing literature reviewed in Chapter 2.

To conclude, the summary of the study will be presented in Section 6.2 followed by the originality of the study in Section 6.3. The results of RQ1 and RQ2 of this study will be summarised in Sections 6.4 respectively. The implications of the

findings and the contribution of the study will be discussed in Section 6.5. The Limitations and suggestions for future research will be presented in Section 6.6.

6.2 Summary of the study

This study has explored the role of VLSs behind the lexical progression of Pakistani university students in the English as a second language (ESL) context. Vocabulary learning, which is a sub-goal of language learning, is essential to achieve other language learning goals (Nation, 2001) since knowledge of vocabulary contributes a very great deal to overall language learning success (Schmitt, 2010a). Based on the body of literature on vocabulary learning strategies (VLSs), this research was carried out on the assumption that the lexical progression of ESL learners derives from learning vocabulary in the class and outside the class using VLSs.

Research has shown that language learners use more strategies in vocabulary learning than in any other linguistics competences (Schmitt, 1997). VLSs are a part of language learning strategies (Nation, 2001) and are defined as specific actions taken by language learners to make learning easier, faster, more enjoyable, more self-directed, more effective and more transferable to new situations (Oxford, 1990). VLSs can be described as the process by which information is obtained, stored, retrieved and used (Rubin, 1987; Schmitt, 1997).

During the past few decades, a number of studies have been carried out to describe the use of VLSs in different ESL contexts. However, most of these studies dealt with individual or small numbers of strategies rather than looking at various types of vocabulary learning strategy as a whole (Schmitt, 1997). Additionally, there has hardly been any longitudinal study conducted on curricular and extra-curricular VLSs in Pakistani ESL contexts. To partially fill such

a gap in the literature, this study aimed to explore VLSs in lexical gain in a Pakistani university context. The research questions addressed in this study are:

RQ1: What are the curricular and extra-curricular VLSs adopted by Pakistani tertiary students to learn English vocabulary?

RQ2: What is the impact of the curricular and extra-curricular VLSs on vocabulary gain in this context?

Due to the aims and nature of this project, this study was designed as a large-scale, longitudinal mixed-methods study which combined both quantitative and qualitative techniques within the project. Schmitt (2010a) pointed out in this regard that "vocabulary learning is longitudinal and incremental in nature, and only research design with the longitudinal element can truly describe it" (p.156), The participants of this study were Pakistani university students, aged between 18-20, and had just started their degree.

Two types of vocabulary test were administered to 578 participants twice as pre- and post-tests with an interval of 52 weeks. The Productive Vocabulary Levels Test (PVLT) (Laufer and Nation, 1999) containing 72 items was used to examine the learners' general-vocabulary gain. The self-devised Productive Course Vocabulary Test (PCVT) modified from Read (2000) and Nation (2001) was used to assess the learners' vocabulary progress specific to the course they had taken, and the test contained 30 items. Since PCVT was a subjectively marked test, the marking scheme was informed by a series of expert focus group discussions, and four trained raters marked the PCVT tests to ensure inter-rater reliability.

The research had two phases of data collection. Based on research methods employed in the field of vocabulary learning strategies (e.g., Alan, 1987; Garb and Stoller, 1997; Gu and Johnson, 1996; Harris and Snow, 2004; Peter, 1987; Schmitt, 1997; Zhang and Li, 2011), this study explored VLSs adopted by students to learn vocabulary using multiple data sources: 120 semi-structured interviews, 120 structured weekly diary reports (four weeks) and 578 VLS questionnaires. The first phase of the study collected the learner's base-line data on their productive vocabulary knowledge using PVLT and PCVT. In the second phase of the data collection, after the post-vocabulary tests using both PVLT and PCVT, all 578 students were divided into four groups based on their course-related and general vocabulary gain in test scores.

These groups were (a) top in both (those who made more than average progress on both general and course-related vocabulary), (b) top in course-related vocabulary (whose course-related test scores were above the average but whose general vocabulary test scores were below the average), (c) top in general vocabulary (whose general vocabulary test scores were above the average but whose course-related test scores were below the average) and (d) bottom in both (whose test scores were below the average in both course-related and general vocabulary). Then, 30 participants from each group were selected randomly for the interviews and structured diary reports.

After confirming internal consistency of the tests and questionnaire, Wilcoxon-Signed Rank Tests were carried out to examine the learners' vocabulary gain during the 52 weeks' period, as measured by the two types of test. The results

showed a significant gain in productive vocabulary knowledge within the twelve-month period of this study. Factor analysis was conducted to understand the nature of strategies used by the learners. The two-factor solution obtained from the analysis explained a total of 74.23% of the *cumulative*, with Factor 1 contributing 65.84% and Factor 2 74.23%. Factor 1 (72 items) was named as curricular VLSs, and Factor 2 (33 items) was named as extra-curricular VLSs.

Almost all participants had vocabulary gains in both the general and course-related vocabulary tests, although the degree of progress varied greatly. Six sets of multiple regression analyses were performed to assess the impact of strategy use on the learners' vocabulary gain, using VLSs as independent variables and vocabulary progression as dependent variables. Overall, curricular VLSs (Std.Beta=0.682, $p<0.001$) were the best predictor for overall course-related vocabulary gain, while extra-curricular VLSs (Std.Beta= -0.309, $p<0.001$) emerged as significant negative predictors of overall course-related vocabulary gain. Extra-curricular VLSs (Std.Beta=0.498, $p<0.001$) best predicted overall general vocabulary gain, and curricular VLSs (Std.Beta=0.159, $p<0.001$) were also significant positive predictors. This suggests that while extra-curricular VLSs played a negative role in the progress of course-related vocabulary, curricular VLSs contributed positively to the advancement of both curricular and extra-curricular VLSs.

Kruskal-Wallis tests and post-hoc comparisons with Bonferroni adjustment identified significant differences among the four groups of students regarding the number of strategies used (Curricular VLSs $p<0.001$; extra-curricular VLSs

p<0.001). While the top in both group reported their use of both curricular and extra-curricular strategies as 'frequent' (M=2.46, SD=1.34; M=2.36, SD=1.43), top in general vocabulary (M=3.37, SD=0.86; M=3.50, SD=1.25) and top in course-vocabulary (M=3.35, SD=0.81; M=2.90, SD=1.28) had higher mean values of adopted VLSs compared to the bottom in both (M=1.42, SD=0.90; M=1.34, SD=0.94) group. Since the points in the Likert scale used in the VLS questionnaire were: 1=*Never*, 2=*Seldom*, 3=*Sometimes*, 4=*Often*, 5=*Always*, the results indicate that the top in both group used both types of strategies on the average of *sometimes.* The bottom in both group used both curricular and extra-curricular VLSs on the average of *Never*. The top in course group used curricular VLSs on the average of *Sometimes* to *Often,* and the average use of extra-curricular VLSs was closer to *sometimes*. The top in general group used both of the curricular and extra-curricular VLSs on the average of *Sometimes* to *Often*, and the average use of extra-curricular was closer to *Often* than that of curricular VLSs.

The interviews and diary reports were analysed to triangulate and elaborate on the quantitative results, and they offered in-depth information with richer and more complex views held by the respondents related to adopted VLSs to learn vocabulary. Findings showed that meta-cognitive strategies such as self-initiative and selective-attention played a significant role in gaining both course-related and general vocabulary. Students who achieved the highest gains in both course-related and general vocabulary mentioned that they applied a broad range of curricular VLSs, such as guessing strategies, dictionary strategies, note-taking

strategies, memory strategies, and activation strategies to learn English vocabulary. They also indicated their usage of extra-curricular VLSs, including reading English literature, newspaper and magazines, watching English TV, watching and listening to English news, music and movies, participating in activities where the mode of communication was English and having interaction with native speakers of English.

As noted above, VLS questionnaire data indicated adopted patterns of VLSs, pointing out that higher achievement learners used more VLSs than low-achievement learners. Interviews and structured diary report data further suggested complex nature of VLSs use, including the use of certain VLSs in particular contexts; two or more strategies used in combination. For instance, it seems that the students who used dictionary strategies without guessing strategies were less successful as compared to those who combined both (i.e., first guessed the meaning from context, and then used dictionaries just to confirm the meaning). The students who applied only guessing and dictionary strategies showed a limited vocabulary gain, as compared to those who applied guessing and dictionary strategies and also made notes of these vocabulary items and memorised the vocabulary by applying memory strategies. The students who progressed in both course-related and general vocabulary tended to use a variety of strategies in combination especially in the types of vocabulary they focused, and their balanced and integrated approach seemed the most efficient in vocabulary learning in this context.

6.3 Originality of the study

This research mainly focused on a Pakistani vocabulary learning context. For this reason, Pakistani L2 English users were volunteered in this study along with other parameters and criteria for selection (see Section 3.3.2 for students' profile). The findings of the study are critically evaluated and discussed with other related studies. However, this study does not aim at comparing or contrasting Pakistani ESL context with any other ESL contexts to generalise the findings. Thus, the findings in this thesis are limited to the vocabulary learning strategies of Pakistani ESL students exclusively. Though the comparison or contrast of Pakistani ESL vocabulary learning profile with other ESL contexts may be interesting, it needs further investigation which is recommended for future research.

The linguistics base of L2 is often dissimilar syntactically, phonetically, semantically, and rhetorically from the L1 (Singhal, 1998). If the Syntactic structure in a second language learner's native language is very different from that of the target language, a greater degree of cognitive reorganisation is required (Segalowitz, 1986). For a reader who does not possess the same linguistic base, there are chances that he or she will face greater difficulties in learning L2. The complications turn out to be bigger when there is a greater difference between L1 and L2. Different writing systems in the world choose different units of spoken mapping which influence the cognitive processing in learning the other languages. Photographic and orthographical information, the

cross-writing system differences between L1 and L2 effect on ESL learning methods, styles and outcomes (Wang, Koda and Perfetti, 2003).

The knowledge of L1 and various strategies to facilitate L2 learning is used by second language learners (Karim,2010). This phenomenon is recognised as language transfer which happens consciously as a deliberate communication strategy, where there is a gap in the learner's knowledge; and unconsciously either because the correct form is not known or because, although it has been learned, it has not been completely automatized (Benson, 2002). To facilitate the comprehension and production (i.e., reading and writing), second language learners use different strategies. The transfer of first language skills or knowledge is one of those learning strategies.

Given the methodological differences between this study and previous L2 studies (e.g, Gu and Johnson, 1996; Schmitt, 1997; Milton, 2007), it is impossible to conclude that all L2 learners follow the same learning styles and learning pattern, although the similarities are suggestive. The impact of L1 on the L2 acquisition, cultural backgrounds and learning preferences make each ESL context distinct from each other. Pakistani L2 learners may also differ from other L2 learners due to the contextual, demographical and lingual differences. Urdu alphabets are totally different from those of English and it is written from right to left. Owing to the need for more research in terms of the similarities and differences between Pakistani and other ESL learning contexts, this study claims its originality in Pakistani L2 context only as it was conducted in a Pakistani ESL context on Pakistani learners. Though this study does not claim that it is generalisable to

other than Pakistani contexts, the findings of this study were comparable to the previous studies which were not conducted specifically in the Pakistani context.

6.4 Conclusion

The findings of the study across the Research Questions are presented in Chapter 5, Section 5.4 in detail. The summary of the findings of RQ1 and RQ2 is presented in this section. The successful learners are meant as the three groups of learners (the top in both, the top in the course and the top in general vocabulary group), and unsuccessful learners are representing the bottom in both group.

As noted in Chapter 2, Section 2.6, since the English language has been an integral part of Pakistani official and social context, the English language is the medium of instructions and mode of communication in Pakistani academic settings. The English language is learnt as a compulsory subject from early years of education. In the education system, Pakistani students are required to cover a large amount of vocabulary to learn English and pass their exams. On the assumption based on the body of the vocabulary learning strategies that the use of VLSs facilitates learners' vocabulary acquisition and that the learners need to be aware of the effective use of VLSs, this study addressed two research questions which focused the patterns of adopted VLSs of Pakistani tertiary students (RQ1) and the impact of their adopted VLSs on their vocabulary gain (RQ2).

As far as the overall curricular VLSs are concerned, the findings of this study revealed that a variety of macro-curricular VLSs was used by the 578 Pakistani

tertiary students focused in this study. These strategies were particularly used to learn the course-related vocabulary. However, they also used macro-curricular VLSs to learn general vocabulary as well, suggesting the positive impact of these strategies in learning general vocabulary. The findings also showed that different types of micro-curricular VLS (e.g., guessing strategies, dictionary strategies, note-keeping strategies, memory strategies, encoding strategies and activation strategies) were on average used with the more or less same frequencies by the overall 578 students. The quantitative findings of the study indicated that successful learners were the most frequent users of curricular VLSs. They used a variety of micro-curricular VLSs based on their learning requirement. This group mostly used a sequenced pattern of adopted micro-curricular VLSs. They reported that they always used guessing strategies whenever new word came on the surface. They noted down the words for later learning and carried on their work. They used dictionary strategies to confirm the guessed meaning, to know the meaning and usage of the unknown word. Then they prepared notes of these specific vocabulary items and memorised these words by using memory and encoding strategies. It seems that they regularly activated newly learnt words to keep them fresh in their memory for long-term learning. This group used meta-cognitive (self-initiatives and selective-attention) strategies most effectively. This group was aware of their needs towards vocabulary learning, and they were independent learners. The unsuccessful students, who showed the least progress in course-related and general vocabulary, used micro-curricular VLSs less frequently. They used almost all the macro-curricular VLSs like their successful

peers. However, the difference of adopted patterns of micro-curricular VLSs was notably different. For example, they used guessing strategies but did not confirm their guessed meaning or did not note the new word to prepare notes or learning. They used a dictionary, but it was just to check the meaning of an unknown word. They prepared notes during English lesson, but it was only in the margin of a book to note down the meaning of a new word. They did not revise these notes to rehearse and refresh the already learnt vocabulary. They also reported that they tried to memorise new word lists from their books by heart without paying attention to the meaning and usage of these words. They revised and activated these lists. The least successful group (the bottom in both) was also the least user of meta-cognitive strategies. They were not independent learners, and their aims were just to follow teachers and to pass their exam.

The quantitative findings of the study with the collaboration of thematic analysis revealed that there was a significant difference in the adopted macro-curricular VLSs between the successful and unsuccessful learners. The findings showed that the successful learners used a mixture of sixteen micro-curricular VLSs to learn vocabulary, whereas the unsuccessful learners used an isolated approach and used either very few curricular VLSs or did not use these strategies in depth. There were significant differences in the adopted macro-curricular VLSs between the successful and unsuccessful learners, the average of their adopted macro-VLSs was also strikingly different. On the surface, it appears that the unsuccessful learners used macro-curricular VLSs less frequently which was also confirmed in their responses in interview data. It revealed that their patterns of using micro-

curricular VLSs were strikingly different from the successful learners. It suggests that each micro-curricular strategy is significant and these strategies seem more effective if used with the collaboration of each micro-curricular VLSs.

The findings of the study show that various macro-extra-curricular VLSs were, on average, used with the more or less same frequencies by the overall 578 students. As far as the overall eleven micro-extra-curricular VLSs were concerned, the findings of this study showed that a variety of micro-extra-curricular VLSs were utilised by the overall 578 learners. The study also indicated that there were significant differences in the adopted macro-extra-curricular VLSs between the successful and unsuccessful learners. It suggests that each micro-extra-curricular VLS is useful in particularly to learning the general vocabulary.

The triangulation of the findings of a quantitative and thematic analysis of the study indicated that there were differences in the adopted patterns of each micro-extra-curricular VLSs. The successful learners used a variety of micro-extra-curricular VLSs based on their learning requirement. This group mostly used a sequenced pattern of adopted VLSs. They integrated extra-curricular VLSs with the curricular VLSs. For instance, while reading English newspaper or listening to the English news, if an unknown word occurred, they always used guessing strategies. They recorded down the new word and carried on whatever activity they were doing. They used dictionary strategies to confirm their guessed meanings and to get the detail information of the words to prepare their notes. Then, they used their notes to memorise and to remember new words. They

used these words in oral and written communication to activate these newly and previously learnt words. The most successful learners also applied meta-cognitive strategies (e.g., self-initiative and selective-attention strategies) in relation to selecting micro-extra-curricular VLSs, which shows that they were aware of their needs towards vocabulary learning and they were independent learners.

On the other hand, the unsuccessful learners used only a very few micro-extra-curricular VLSs. They used extra-curricular VLSs in isolation and did not integrate with curricular VLSs. For example, they read a newspaper or watched English movies, and a few of them also guessed the meaning when they needed. However, they did not note these new words down for later learning. They did not use dictionaries to confirm the guesses or did not try to memorise these new words. Opposite to the successful learners, this group did not use meta-cognitive strategies. Their aims were to pass the exam, and their perceptions about using VLSs were just to apply either a dictionary or memory (rote learning of vocabulary lists). They were not independent learners, and they perceived that the best way of learning vocabulary was just to follow teachers instead of independent learning of vocabulary.

In relation to the impact of VLSs (RQ2), the findings of the study suggest that macro-curricular VLSs seem to be useful to enhance the productive knowledge of the course-related vocabulary and general vocabulary. However, macro-extra-curricular VLSs turned out to be helpful in learning general vocabulary and seem to be useful in gaining only general vocabulary knowledge.

When the impact of curricular VLSs was re-analysed at a micro level, selective-attention, dictionary strategies for comprehension, association and imagery (memory encoding strategies), were positively associated with course-related vocabulary progress. However, semantic encoding and usage oriented note-taking strategies seemed to work adversely in learning course-related vocabulary. As discussed in Section 5.4, this is due to the misconception of the top in course and the top in general group who perceived that they should focus mainly either on the course or general vocabulary and underestimated the significance of collaborated usage of vocabulary learning strategies. For the progress of general vocabulary, self-initiative and selective-attention seemed to be the key to success in general vocabulary progress. As discussed in Section 2.4.4, meta-cognitive strategies have often been found beneficial in learning vocabulary in ESL and EFL contexts; the current study elaborated this point by highlighting that meta-cognitive strategies play a significant role in the successful learning of course-related vocabulary. As discussed in Section 5.4.1.4, the thematic analysis revealed and elaborated the quantitative finding of regression analysis. The students who progressed in both general and course-related vocabulary used meta-cognitive strategies in relation to course and general vocabulary learning. However, the top in course group used meta-cognitive strategies mainly to learn course-related vocabulary, whereas the top in general group used meta-cognitive strategies to learn specifically general vocabulary. It suggests that balance approach towards learning course-related and general

vocabulary by applying the mixture of vocabulary learning strategies seem to be a useful approach in Pakistani tertiary context.

Of the eleven micro-extra-curricular VLSs examined, reading English magazines, and participating in out-of-class events where the mode of communication was English were found to be effective to enhance general vocabulary. Additionally, out of class events where the mode of communication was English was considered to be useful in learning course-related vocabulary as well. The findings also revealed that the group of students who progressed in both general and course-related vocabulary (top in both group) used macro-curricular and extra-curricular VLSs to learn the course and general vocabulary in a balanced manner. They applied various micro-curricular and extra-curricular VLSs in combination. Their balanced vocabulary learning approach by using a mixture of strategies seemed the most efficient way of learning vocabulary. However, the learners who showed progress (general vocabulary progress above the mean and course-related progress below the mean) in general vocabulary used micro-curricular and extra-curricular VLSs to mainly learn general vocabulary, whereas the learners who mostly progressed in course vocabulary (general vocabulary progress below the mean and course-related progress above the mean) adopted micro-curricular and extra-curricular VLSs to learn course-related vocabulary. It suggests that course-related and general vocabulary can be learnt by using micro-curricular VLSs. However, to learn course-related vocabulary, extra-curricular VLSs does not seem positive. It also suggests that to learn general vocabulary, extra-curricular VLSs can be useful. However, they should be used

with the collaboration of curricular VLSs. Based on the (Section 2.2.3) learning process, extra-curricular VLSs seem to be useful in saving new input of vocabulary receptively in sensory memory. To move this receptive knowledge from sensory store to the short-term and long-term memory store, rehearsal, encoding and retrieval are required otherwise these extra-curricular VLSs put an adverse effect in learning.

6.5 The implications of the findings and the contribution of the study

The study has theoretical, methodological and practical implications in the area of vocabulary learning in general and vocabulary learning strategies. To the researcher's knowledge, this was the first longitudinal mixed-methods study that investigated learners' use of both curricular and extra-curricular VLSs and their individual and collective effects on general and course-related vocabulary gain. In doing this, this dissertation has given an understanding into the adequacy of curricular and extra-curricular VLSs on productive knowledge of lexical increase and accordingly added to the field of Pakistani tertiary ESL context. It is also believed that this research has given the first comprehensive findings on the use of curricular and extra-curricular VLSs on the progress of productive vocabulary knowledge in Pakistani tertiary ESL context. This section will describe some theoretical, methodological and pedagogical implications of the study and provide recommendations for the learning of course-related and general vocabulary and use of VLSs to enhance productive knowledge of vocabulary in Pakistani ESL context. The findings of this study also contribute to the

understanding of the construct(s) measured by the two types of a productive vocabulary test. The current study contributed to the current research on VLSs in three ways.

6.5.1 The theoretical implications

The taxonomies and classifications of VLSs by previous research are utilised to scrutinise a new classification of VLSs in Pakistani ESL context. Vocabulary learning strategies, such as meta-cognitive strategies, guessing strategies, dictionary strategies for comprehension, extended dictionary strategies, note-taking strategies, memory strategies, encoding strategies and activation strategies were adopted from Gu and Johnson (1996). Eleven vocabulary learning strategies, i.e., reading English magazines, reading English newspaper, watching English movies, watching English TV, listening to English music, watching programme with English tele-text, watching and listening to English news on TV, watching sports and listening to English commentary, listening to news on radio, English speaking interaction, and out of class events where mode of communication is totally English were adopted from Milton and Meara (1997), Schmitt (1997), Milton (2008) and Nation (2015). Factor analysis explored two very clear groups of vocabulary learning strategies generating the new taxonomy of vocabulary learning strategies in Pakistani context since data was collected from Pakistani learners. Qualitative findings also enhanced the theoretical contribution of the study by bestowing the details of adopted strategies of learners to learn their vocabulary. It is innovative in that it showed the role of

meta-cognitive strategies in a successful learning of both course and general vocabulary.

The taxonomy unites the part of a few extra-curricular VLSs that is briefly touched by the previous scholars. It contributes to the theory of VLSs by exploring the adopted patterns of VLSs by Pakistani learners. The findings of the study show that the successful Pakistani learners used a variety of vocabulary learning strategies. However, the most used strategies include meta-cognitive strategies, dictionary strategies, guessing strategies, activation strategies, reading English magazines, reading English newspaper, watching English movies, watching English TV, listening to English music, watching sports and listening to English sports-commentary, and out of class events where mode of communication was totally English.

The findings of the study show that the most successful learners used curricular VLSs with extra-curricular VLSs and incorporated these strategies with meta-cognitive strategies. It contributes to the theory of VLSs that the use of an appropriate integration of VLSs plays a major role in learning vocabulary in a Pakistani ESL context too, which has been unknown until now. These integrated VLSs are working up together to build an adequate vocabulary storage and facilitate appropriate retrieval and usage.

This study also highlighted that VLSs seem to be more effective in learning productive vocabulary if used in collaboration. Each vocabulary learning strategy seemed to be commenting on each other. The study also confirmed the

usefulness of the curricular VLSs (meta-cognitive strategies, guessing strategies, dictionary strategies, note-taking strategies, memory strategies, encoding strategies and activation strategies) to enhance course and general productive vocabulary gain. The study implicates the usefulness of extra-curricular VLSs (using English media, using English press and out of class social interaction) in facilitating the learning of general vocabulary.

6.5.2 Methodological implications

To the researcher's best knowledge, this is the first longitudinal, large-scale and mixed methods study in the ESL context. To explore the impact of VLSs, 578 Pakistani tertiary students were focused for the twelve months of the study. To measure the course-related and general vocabulary gain, two types of productive vocabulary tests were used twice with the twelve months' gap in between.

In the second phase of the study, to explore the pattern of adopted VLSs, VLSs questionnaire, diary reports for four weeks and interviews were conducted. The quantitative methods facilitated to answer the Research Questions. However, the in-depth findings of the thematic analysis and diary reports expanded the quantitative findings in relation to the Research Questions which would not be achieved without applying the mixed methods. Most of the previous studies (see Section 2.7) seemed to be either experimental or exploratory studies using either quantitative or qualitative method and did not achieve the in-depth details. It is hoped that the work will contribute the methodological implication which can be used in future studies of vocabulary learning and vocabulary learning strategies.

As discussed earlier (see Section 1.1.1.4) there is a lack of research on VLSs in Pakistani ESL context due to the lack of funds and methodological training to new researchers. This study confirms the usefulness of mixed methods approaches in conducting research on Pakistani ESL vocabulary learning strategies. Quantitative results with the collaboration of detailed qualitative results recommend some methodological implications for future researchers in this context. The methodological use of longitudinal framework with mixed methods (i.e. Pre- and post-Vocabulary Levels Test, Pre- and Post-productive course vocabulary test, VLSs questionnaire survey, structured weekly diary reports of vocabulary learning and semi-structured interviews) in a complementary way provided a clearer picture of the adopted patterns of VLSs and their impact on vocabulary gain in Pakistani tertiary context. The triangulation of the quantitative and qualitative outcomes complemented the findings of the study and elaborated the research answers. For example, the VLSs questionnaire provided the frequency of adopted VLSs by the participants. The structured weekly diary reports provided the details of used VLSs for the four weeks by the specific four group of the students. It provided very rich information with a quantitatively reported checklist and qualitative responses of the students about their used VLSs. Finally, the interview responses provided the details about the adopted VLSs, including their specific aims behind using VLSs and how exactly each VLS was applied. Questionnaire response data were subjected to factor analysis resulting in very clear two factors, e.g., curricular VLSs and extra-curricular VLSs. In interviews, the participants reported that they

used curricular VLSs mostly to learn course-related vocabulary and extra-curricular VLSs to learn general vocabulary. Interview data also provided complementary information regarding exploring the reasons behind the frequent or infrequent use of adopted VLSs reported in VLSs questionnaire and structured weekly diary reports which seems requisite to answer the research question one (what are the curricular and extra-curricular VLSs adopted by Pakistani tertiary students to learn English vocabulary).

The reliability analysis (see Section 4.3.1) confirms the Productive Vocabulary Levels Test's (PVLT) reliability as a measure of the productive vocabulary in the Pakistani context. The PVLT was used in this study to assess the productive knowledge of general vocabulary. The PVLT was found to be very practical to administer and mark. It can assess learners' vocabulary levels and their progress with the passage of times.

A series of reliability measures were used to assess the reliability of Vocabulary Progression Test (PCVT) (see Section 4.4.1). This study also confirms the construct and reliability of a self-devised PCVT test modified from Read (2000) and Nation (2001) as a measure of the productive vocabulary in the Pakistani context. This test was also relatively easy to devise or modify if needed, easy to administer and easy to mark according to the generated marking scheme in this study.

6.5.3 Pedagogical implications

Based on the findings of this study, some pedagogical implications and recommendations are offered in this section for vocabulary learning, vocabulary teaching and VLS training to Pakistani undergraduate ESL learners studying English as a compulsory module. The main aim of this research is to investigate the role of VLSs on vocabulary learning and development. Before implicating suggestions to Pakistani ESL learners and teachers to use particular VLSs, certain considerations have to be taken into account. None of its aims included investigating and recommending suggestions in relation to the classroom teachers directly and it needs further research focusing on classroom vocabulary teaching. However, the findings of this study can be beneficial to the learners as well as classroom teachers in Pakistani ESL context in many ways.

As found in the additional background and contextual data collected alongside the main study (see Section 3.3.1.1), although the syllabus given to Pakistani students put a prime focus on vocabulary, grammar and comprehension yet vocabulary is the least focused elements by teachers during the lessons. No specific training is given to students to learn vocabulary and more emphasis is given to teaching grammar and comprehension during lessons.

As discussed in the literature review, vocabulary learning can be challenging for second language learners. Research on second language teaching emphasised the need for encouraging learners to learn vocabulary independently as teachers are unable to teach all of the vocabulary covered in the course during lessons. However, it is also recommended that teachers should include a good structure,

long-term VLSs' training programme in their teaching plan in which learners should be made aware of a wide range of VLSs and their applications. Additionally, the teachers should also involve learners in vocabulary learning activities in the classroom during the lessons as well and should not leave vocabulary learning to take care of itself. Learners should be offered vocabulary learning strategies' training so that they can utilise VLSs to learn their vocabulary independently as well.

The study implicates that learners should be provided vocabulary input and output opportunities during the lessons. The results of this study showed that the most successful learners showed more progress in the vocabulary tests than their peers named as the bottom group. The explanation given in this study is that the former group do more practice than the latter one (see chapter 5). This study suggested that learners should be involved in productive tasks during their lesson so that they can have an exposure of communication and chance to retrieve their vocabulary knowledge. Teachers should, therefore, include more productive tasks where learners are required to produce vocabulary in speaking and writing (i.e., games, role plays, group discussions) in their lesson plans for this purpose considering the needs of high-proficient and low-proficient students. For example, teachers can involve students in guessing from context tasks and then followed by dictionary consultancy and notes preparation. Teachers can introduce how to use memory strategies and involve students in productive tasks where they can retrieve and activate their vocabulary knowledge.

The findings of the study revealed that reading English magazines, watching English movies and having social interaction in English communication society can be useful in learning vocabulary. This finding should be exploited through applying a well-staged authentic reading and listening programme by building up an adequate vocabulary store and developing guessing, dictionary and note-keeping skills. Lesson plans should aim to take second language learners gradually through graded and controlled reading, and by providing training in using effective vocabulary learning strategies to get benefit from authentic reading and listening.

The findings of the study show that the most successful learners used monolingual dictionary strategies for comprehension and extended information. Learners should be given monolingual dictionary strategies training by their teachers so that they can find words easily which they need to find. Learners should be aware of how to check the meaning of a word and to get other associated information, such as antonyms, synonyms, sentence usage, grammatical information, spelling, contextual usage and pronunciation.

Memory strategies, such as association and imagery turned out to be the most useful in learning course-related vocabulary. Teachers should introduce a group of words in the classroom that share a similar art in spelling. Learners should be involved in activities where they can practice creating an image of newly learnt words and act out this word to remember it.

Since meta-cognitive strategies seemed to be useful to learn general and course-related vocabulary, teachers should train their students to use these strategies appropriately to learn vocabulary. Learners should be trained in planning their vocabulary learning which involves taking decisions on where to emphasise focus, how to focus the attention and how often to give attention to the target vocabulary. It can be beneficial if learns are aware of their vocabulary learning goals and choosing the most appropriate vocabulary to achieve their learning goals. They should be aware that what aspects of word knowledge they need to learn. This also encompasses choosing the most appropriate VLSs from a range of known possibilities and deciding how to follow the specific VLS and when to switch to another strategy. For example, guessing a word should be followed by noting down this new word for later learning. Then checking the meaning and usage of this word from the dictionary, prepare notes and apply memory strategies to memorise this word and use activation strategies to retrieve it and refresh it in long-term memory.

Learners who have shown progress in both course and general vocabulary seemed to be using a combination of VLSs successfully. However, interview data revealed that there was not any VLSs training given to the learners to learn vocabulary and the findings revealed that not all learners were using VLSs consciously or meaningfully. It is hoped that this study has shed a light on some recommended ways of using VLSs for learners, and it is hoped that teachers in Pakistan ESL contexts could be benefitted from the findings.

6.6 Limitations and suggestions for future research

Despite these implications of the study, this study also has a few limitations. The limitations of the study and ideas emerged from the limitations for future research are presented in this section.

The first limitation is that data collection methods involved asking learners about their usage of VLSs. This sort of method is criticised as vulnerable since respondents' answers might not accurately reflect their actual usage or choice (Denscombe, 2007). To minimise this issue, anonymity was confirmed to the participants of the study before the administration of the VLS questionnaire. The participants were informed about the significance of the study in enhancing vocabulary learning in Pakistani ESL context, and they were requested for their complete honest responses. The participants' responses about their adopted VLSs gathered in the VLS questionnaire were also compared and cross-checked while triangulating quantitative and qualitative findings. While the use of multiple data sources undoubtedly contributes to the accuracy of the findings, it has to be noted that the results of this study were entirely dependent on the learners' self-reports.

Methods like *think aloud protocol* might be able to depict more detailed and accurate evidence about how learners used VLSs since it can partially tap into the learners' semi-conscious activities and thoughts. Further research that includes data collected by a think-aloud protocol would add richness of the description of applied VLSs.

The second limitation is that this study focused on one of the institutes of Lahore Pakistan. It would be an ideal if a large scale mixed methods study would be conducted focusing on the institutions of different cities of Pakistan. While the institution to which the participants of the study belonged was carefully selected to represent students in the tertiary education system in Pakistan as much as possible, accessing a broad range of universities was beyond the scope of this study. The results of the future study covering a wide range of institutions in Pakistan would strengthen the generalisability of the findings to all ESL contexts in Pakistan. Nevertheless, this study was the first large-scale study on Pakistani tertiary students to explore the role of VLSs in their ESL context. It is hoped that this study would serve a useful starting point for future studies that further investigate the use of vocabulary learning strategies to enhance vocabulary learning in Pakistan.

Bibliography

Abbas, S., 1993. The power of English in Pakistan. *World Englishes,* 12(2)**,** pp.147-56.

Abdul, R. and Mackey, A., 2008. Second Language Acquisition Research methods. In K. King., N. Horberger, eds. 2008. *Encyclopaedia of Language and Education*. Vol. 10. New York: Springer. Pp. 3301-13.

Abraham, R.G., and Vann, R.J., 1987. Strategies of two language learners: A case study. In A. Wenden and J. Rubin, eds. 1987. *Learner strategies in language learning*. Englewood Cliffs: Prentice-Hall. Pp. 85-102.

Adolphs, S., and Schmitt, N., 2003. Lexical coverage of spoken discourse. *Applied Linguistics*, 24(4), pp. 425-38.

Ahmad, M.O.,1989. Vocabulary learning strategies. In P. Meara, ed. 1989. *Beyond Words*. London: CILT. Pp. 3-14.

Aitchison, J. 2003. *Words in the mind: An introduction to the mental lexicon*. 3rd ed. Oxford: Blackwell. Third edition

Alan, M., 1987. Poetry and Songs as Effective Language Learning Activities. In W.M.Rivers, ed.1987. *Interactive language teaching*. Cambridge: Cambridge University Press. Pp.93-109.

Albrechtsen, D., Haastrup, K. and Henriksen, B., 2008. *Vocabulary and Writing in a First and Second Language: Process and Development*. Basingstoke: Palgrave Macmillan.

Alderson, J. C., 1993. The relationship between grammar and reading in an English for academic purposes test battery, in D. Douglas and C. Chappelle, eds. *A New decade of Language Testing Research,* Washington, TESOL. Pp 203-14.

Allen, V.F., 1983. *Techniques in Teaching Vocabulary*. Oxford: Oxford University Press.

Alsaif, A. and Milton, J., 2012. Vocabulary input from school textbooks as a potential contributor to the small vocabulary uptake gained by English as a foreign language learners in Saudi Arabia. *The Language Learning Journal*, *40*(1), pp.21-33.

Anderson, J.P. and Jordan, A.M., 1928. Learning and retention of Latin words and phrases. *Journal of Educational Psychology*, 19, pp.485-96.

Anthony, D., 1999. *Understanding Advanced Statistics: A Guide for Nurse and Health Care Researchers*. Edinburgh: Churchill Livingstone.

BAAL Documents for Public Use, 2000. Good Practice Guide for Students. [pdf] The British Association for Applied Linguistics. Available at: <http://www.baal.org.uk/dox/goodpractice_stud.pdf> [Accessed 23 July 2016].

Bachman, L. F., 2004. *Statistical Analysis for Language Assessment*. Cambridge: Cambridge University press.

Bachman, L.F., 2006. Generalizability: a journey into the nature of empirical research in applied linguistics. In M. Chalhoub-Deville. and C.A. Duff., eds. 2006*. Inferences and Generalizability in Applied Linguistics*. Amsterdam: John Benjamins. Pp.165-207.

Baddeley, A., 1997. *Human Memory: Theory and Practice*. Hove: Psychology press LTD.

Bailey, K., 1983. Competitiveness and anxiety in adult second language learning: Looking at and through the diary studies. In M.Seliger and M.Long, eds. C*lassroom oriented research in second language acquisition*. Rowley: Newbury House. Pp.67-103.

Bailey, K.M., 1996. *Voices from the language classroom: Qualitative research in second language*. Cambridge: Cambridge University Press.

Barcroft, J., 2009. Strategies and performance in intentional L2 vocabulary learning. *Language Awareness*, 18(1), pp.74-89.

Barnett, V. and Lewis, T., 1978. *Outliers in statistical data*. New York: Willy.

Baskerville, R., Pentland, B. T., and Walsham, G., 1994. A Workshop on Two Techniques for Qualitative Analysis: Interviewing and Evaluation. In *Proceedings of the Fifteenth International Conference on Information Systems*, J. I. DeGross, S. L. Huff, and M. C. Munro (eds.), *Vancouver*, 1994, pp. 503-4.

Baxter, J., 1980. The dictionary and vocabulary behaviour: a single word or a handful? *TESOL Quarterly*,14(3), pp. 325-36.

Bazeley, P., 2013. *Qualitative Data Analysis: Practical Guide*. London: Sage.

Beglar, D. and Hunt, A., 1999. Revising and validating the 2000 Word Level and University Word Level Vocabulary Tests. *Language Testing*, 16 (2), pp.131-62.

Bensoussan, M and Luafer, B. 1984. Lexical guessing in context in EFL reading. *Comprehension Journal of Research in Reading*,7(1), pp.15-32.

Bensoussan, M., Sim, D. and Weiss, R., 1984. The effect of dictionary usage on EFL test performance compared with student and teacher attitudes and expectations. *Reading in a Foreign Language*, 2(2), pp.262–76.

Benson, C., 2002. Bilingual education in Africa: An exploration of encouraging connections between language and girls' schooling. *Education—A Way out of Poverty*, pp.79-95. Available at <http://www.sida.se/contentassets/eb19ecb36def443f911678ca5cbffeed/education--a-way-out-of-poverty_620.pdf#page=81> [Accessed 15 September 2017].

Bowerman, B.L. and O'Connell, R.T., 1990. *Linear statistical models: An applied approach*. 2nd ed. California: Duxbury.

Bowling, A., 1997. *Research Methods in Health*. Buckingham: Open University Press.

Brannen, J., 2005. Mixed Methods Research: *A Discussion Paper*. Southampton: ESRC National Centre for Research Methods. Available at: <http://www.ncrm.ac.uk/publications/documents/methodsreviewpaperncrm-005.pdf> [Accessed 28 July 2016].

Briggs, S.R., and Cheek, J.M., 1986. The Role of Factors Analysis in the Development and Evaluation of Personality Scales. *Journal of Personality*, 54, (1), pp.106-48.

Brown, T. S. and Perry, F. L., 1991. A comparison of three learning strategies for ESL vocabulary acquisition. *TESOL Quarterly,* 25 (4), pp. 655-70.

Browns, J.D., 2001. *Using Surveys in Language Programs*. Cambridge: Cambridge University Press.

Campion, M.E. and Elley, W.B., 1971. *An academic vocabulary list*. New Zealand Council for Educational Research.

Capstick, T., 2011. Language and migration: The social and economic benefits of learning English in Pakistan. *Dreams and Realities*. Available at<https://www.britishcouncil.jp/sites/default/files/eng-dreams-and-realities-en.pdf#page=207> [Accessed 15 September 2017].

Carney, R.N., 2011. *Memory strategies*. In Encyclopedia of Child Behavior and Development (pp. 937-938). Springer US.

Carter, R., 1998., *Vocabulary.* 2nd ed. London: Routledge.

Catalán, R. M. J., 2003. Sex differences in L2 vocabulary learning strategies. *International Journal of Applied Linguistics*, 13 (1), pp. 54–77.

Cattell, R. B., 1978. *The scientific use of factor analysis*. New York: Plenum Press.

Çelik, S. and Toptaş, V., 2010. Vocabulary learning strategy use of Turkish EFL learners. *Procedia-Social and Behavioral Sciences*, *3*, pp.62-71.

Chalhoub-Deville, M., Chapelle, C., and Duff, P. Eds., 2006. *Inference and generalizability in applied linguistics*. Amsterdam: John Benjamins.

Chamot, A. U., 1987. The Learning strategies of ESL students. In A. Wenden. and J. Rubin, eds. *Learner Strategies in Language Learning*. Englewood Cliffs: Prentice Hall. Pp. 71-84.

Chamot, A.U. and O'Malley, J.M., 1994. *The CALLA handbook: Implementing the cognitive academic language learning approach*. Massachusetts: Addison-Wesley Publishing Company.

Chern, C.L., 1993. Chinese students' word-solving strategies in reading in English. In T. Huckin, M. Haynes, and J. Coady, eds. 1993. *Second Language Reading and Vocabulary Learning*. New Jersey: Ablex Publishing Corporation. Pp.67-85.

Clark, L.A., Watson, D., 1995. Constructing Validity: Basic Issues in Objective Scale Development. *Psychology Assessment*, 7(3), pp. 309-19.

Clarke, D. F. and Nation, I. S. P., 1980. Guessing the meanings of words from context: Strategy and techniques. *System,* 8 (3), pp. 211-20.

Coady, J., 1993. Research on ESL/EFL vocabulary acquisition: Putting it in context. In: T. Huckin, M. Haynes, and J. Coady, eds. *Second Language Reading and Vocabulary Learning*. Norwood: Ablex.

Coady, J., and Huckin, T. eds.,1997. *Second language vocabulary acquisition*. Cambridge: Cambridge University Press.

Cohen, A. D.,1987a. Studying learner strategies. How we get information. In A. Wenden and J. Rubins, eds. *Learner strategies in language learning*. Englewood Cliffs: Prentice Hall. Pp. 31-40.

Cohen, A. D., 1987b. The use of verbal and imagery mnemonics in second-language vocabulary learning. *Studies in Second Language Acquisition*, 9(1), pp.43-62.

Cohen, J., 1968. Weighted kappa: nominal scale agreement with provision for scaled disagreement or partial credit. *Psychological Bulletin* 70, (4), pp. 213-20.

Cohen, J., 1988. *Statistical power analysis for the behavioral sciences*. Hillsdale: Erlbaum.

Cohen, L., Manion, L. and Morrison, K., 2000. *Research Methods in Education.* 5th ed. London: Routledge Falmer.

Cohen, L., Manion, L. and Morrison, K., 2007. *Research Methods in Education*. 6th ed. Abingdon: Routledge.

Coleman, H., 2010. Teaching and learning in Pakistan: The role of language in education. *Islamabad: The British Council*. Available at http://www.asiapacificmle.net/wp-content/uploads/2013/03/pakistan-ette-english-language-report.pdf [Accessed 15 September 2017].

Coleman, H. (ed.). 2011. *Dreams and Realities: Developing Countries and the English Language*. London: British Council. Available at <http://www.teachingenglish.org.uk/transform/books/dreams-realities-developing-countriesenglish-language>. [Accessed 17 September 2017].

Coleman, H. and Capstick, A., 2012.*Language in education in Pakistan: Recommendations for policy and practice*. Islamabad: British Council. Available at <http://www.asiapacificmle.net/wpcontent/uploads/2013/02/Coleman__Capstick_2012.pdf> [Accessed 18 September 2017].

Comrey**,** A**.**L. and Lee, H. B., 1992. *A First course in factor analysis.*2nd ed. Hillsdale: Erlbaum.

Comrey, AL., 1988. Factor-analytic methods of scale development in personality and clinical psychology. *Journal of Consulting and Clinical Psychology*, 56(5), pp. 754-61.

Cook, T.D. and Campbell, D.T., 1979. *Quasi-Experimentation: Design and Analysis Issues for Field Settings*. Chicago: Rand McNally.

Cortina, J.M., 1993. What is Coefficient Alpha? An examination of theory and application. *Journal of Applied Psychology*, 78(1), pp. 98-104.

Costello, A.B. and Osborne, J.W., 2005. Best Practices in Exploratory Factor Analysis: Four Recommendations for Getting the Most from Your Analysis*. Practical Assessment, Research and Evaluation*, 10(7), pp. 1-9.

Cowie, A., 1990. Focus on the dictionary user. In M., Pienemann, ed. *Language Processing and Second Language Development: Processability Theory*. Philadelphia: John Benjamins.

Creswell, J.W., 2003. *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. Thousand Oaks: Sage

Creswell, J.W., 2007. *Qualitative enquiry and research design: Choosing among five approaches*. US: Sage publications Ltd.

Creswell, J. W., 2009. Research design: *Qualitative, quantitative, and mixed methods approaches*. 3rd ed. Thousand Oaks: Sage Publications Inc

Creswell, J. W., and Clark, V. L. P., 2011. *Designing and conducting mixed methods research*. 2nd edn. Thousand Oaks, CA: Sage.

Crocker, L., and Algina, J., 1986. *Introduction to Classical and Modern Test Theory*. New York: CBS College Publishing.

Cronbach, L.J. 1951. Coefficient Alpha and the Internal Structure of Tests. *Psychometrika*, 16(3), pp.297-334. Available at:

<http://kttm.hoasen.edu.vn/sites/default/files/2011/12/22/cronbach_1951_coefficient_alpha.pdf> [Accessed 28 July 2016].

Crothers, E. and Suppes, P., 1967. *Experiments in Second-Language Learning*. New York: Academic Press.

Crow, J.T. and Quigley, J.R. 1985. A semantic field approach to passive vocabulary acquisition for reading comprehension. *TESOL Quarterly*. 19(3), pp. 497-513.

Daller, H., Milton, J. and Treffers-Daller, J. eds., 2007. *Modelling and assessing vocabulary knowledge*. Cambridge: Cambridge University Press.

Dancey, C.P. and Reidy, J., 2007. *Statistics without Maths for psychology*. 4th ed. Essex: Pearson Education Limited.

Davoudi, M. and Chavosh, M., 2016. Vocabulary Learning Strategy Use by Iranian EFL Learners across Proficiency Levels. *International Journal of Linguistics*, *8*(1), pp.67-81.

Denzin, N.K., 1989. *Interpretive interactionism*. California: Sage.

Denscombe, M., 2007. *The Good Research Guide. Berkshire*. *New York: McGraw-Hill Education*.

DeVellis., 2003. *Scale Development. Theory and Applications*. 2nd ed. California: Sage.

DeVellis., 2012. *Scale Development. Theory and Applications.* 3rd ed. California: Sage.

Dóczi, B., 2011. Comparing the vocabulary learning strategies of high school and university students: A pilot study. *WoPaLP*, *5*, pp.138-58.

Dornyei, Z. (2003). *Questionnaires in second language research: Construction, administration, and processing*. Mahwah: Lawrence Erlbaum.

Dornyei, Z., 2007. *Research Methods in Applied Linguistics*. Oxford: Oxford University Press.

Dornyei, Z., 2009. Psychological processes in language acquisition II: Explicit versus implicit learning. *The psychology of second language acquisition*, pp.131-74.

Dornyei, Z., 2010. *Questionnaires in Second Language Research*. 2nd ed. New York: Routledge.

Duff, p., 2006. Beyond Generalizability. In M. Chalhoub-Deville. and C.A. Duff., eds. 2006. *Inferences and Generalizability in Applied Linguistics*. Amsterdam: John Benjamins. Pp.65-95.

Dziemianko, A., 2010. Paper or electronic? The role of dictionary form in language reception, production and the retention of meaning and collocations. *International Journal of Lexicography,* 23(3), pp. 257-73.

Eisenhardt, K.M., 1989. Building Theories from Case Study Research. *Academy of Management Review*, 14(4), pp.532-50.

Elgort, I. and Nation, I.S.P., 2010. Vocabulary learning in a second language: Familiar answers to new questions. In P. Seedhouse, S. Walsh and C. Jenks, eds. *Conceptualising 'learning' in applied linguistics*. Basingstoke: Palgrave Macmillan. Pp. 89-104.

Ellis, N. ,1995. Vocabulary acquisition: psychological perspectives and pedagogical implications. *The Language Teacher,* 19 (2), pp. 12-16.

Ellis, N., 1994. Implicit and explicit vocabulary acquisition. In N. C. Ellis, ed. *Implicit and Explicit Learning of Second Language*. London: Academic Press. Pp.211-82.

Ellis, R., Loewen, S., Elder, C., Erlam, R., Philp, J., and Reinders, H., 2009. *Implicit and explicit knowledge in second language learning, testing and teaching*. Bristol: Multilingual Matters.

Erten, I.H. and Tekin, M., 2008. Effects on vocabulary acquisition of presenting new words in semantic sets versus semantically unrelated sets. *System*, *36*(3), pp.407-22.

Erzberger, C. and Kelle, U., 2003. Making Inferences in Mixed Methods: The Rules of Integration. In A. Tashakkori and C. Teddlie, eds. 2003. *Handbook of Mixed Methods in Social and Behavioural Research*. Thousand Oaks: Sage. Pp. 457-90.

Fabrigar, L.R., Wegener, D.T., MacCallum, R.C. and Strahan, E.J., 1999. Evaluating the Use of Exploratory Factor Analysis in Psychological Research. *Psychological Methods*, 4(3), pp.272-99.

Fan, M. Y., 2003. Frequency of use, perceived usefulness, and actual usefulness of second language vocabulary strategies: A study of Hong Kong learners. *The Modern Language Journal*, 87(2), pp. 222-41.

Fatima, I. and Pathan, H.Z., 2016. Investigating Learning Strategies for Vocabulary Development: A Comparative Study of Two Universities of Quetta, Pakistan**.** *Advances in Language and Literary Studies*, 7(2), pp. 7-12.

Ferguson, E. Cox, T., 1993. Exploring Factor Analysis: a user's guide. *International Journal of Selection and Assessment*, 1(2), pp.84-94.

Ferris, D., 1988. *Reading and Second Language Vocabulary Acquisition*. Unpublished manuscript, Department of Linguistics, University of Southern California.

Field, J. (2004). *Psycholinguistics: The Key Concepts*. United Kingdom, London: Routledge.

Field, A.P., 2009. *Discovering Statistics Using SPSS*. 3rd ed. London: SAGE.

Finch, J. F. and West, S.G., 1997. The investigation of personality structure: Statistical models. *Journal of Re-search in personality*, 31(4), pp. 439-85.

Fitzpatrick, T., Al-Qarni, I. and Meara, P., 2008. Intensive vocabulary learning: a case study. *Language Learning Journal*, 36(2), pp. 239-48. Available at: <http://www.lognostics.co.uk/vlibrary/alqarni2008.pdf> [Assessed 20 August 2016].

Fox, J., 1991. *Regression Diagnostics*. California: Sage.

Fund for Peace. 2011. The Failed States Index 2011. Washington DC: The Fund for Peace. Available at < http://www.fundforpeace.org/global/library/cr-11-14-fsfailedstatesindex2011-1106q.pdf >. [Accessed 12 September 2017].

Gairns, R. and Redman, S., 1986. *Working with Words*. Cambridge: Cambridge University Press.

Gao, X., 2007. Has language learning strategy research come to an end? *Applied Linguistics*, 28(4), pp. 615-20.

Gaur, A.S. and Gaur, S.S., 2009. *Statistical methods for practice and research*. 2nd ed. London: Sage.

Glaser, B.G. and Strauss, A.L., 1967. *The Discovery of Grounded Theory: Strategies for Qualitative Research*. New York: Aldine.

Gorsuch, R.L., 1983. *Factor Analysis*.7th ed. Hillsdale: Erlbaum.

Government of Pakistan Ministry of Education Islamabad, 2006. *National Curriculum for ENGLISH LANGUAGE Grades I –XII.* Available at: < http://bisep.com.pk/downloads/curriculum/Grades-I-XII/pk_al_eng_2006_eng.pdf> [Accessed 12 June 2012].

Government of Pakistan. 2011. *Population Census Organisation*. Islamabad: Statistics Division, Ministry of Economic Affairs & Statistics. Available at <http://www.census.gov.pk/>. [Accessed 16 September 2017].

Grab, w. and Stoller, F, L., 1997. Reading and vocabulary development in a second language. In J. Coady and T. Huckin. Eds.,1997. *Second Language Vocabulary Acquisition*. Cambridge: Cambridge University Press. Ch.6.

Green, S. B., 1991. How many subjects does it take to do a regression analysis? *Multivariate Behavioral Research*, 26(3), p. 499-510.

Green, A., 2011. The password test–design, development, and reliability. *English Language Testing*. Pp 1-20. Available at: < http://englishlanguagetesting.co.uk/wp-content/uploads/2016/03/The-Password-Test-Design-Development-and-Reliability_5.pdf> [Accessed 30 April 2016].

Gu, P.Y., 1994. Vocabulary learning strategies of good and poor Chinese EFL learners. In N. Bird, P. Falvey, A.B.M. Tusi, D.M. Allispn and A.McNeill, eds. 1994. *Language and learning. Hong Kong*: The Education department. Pp.376-401. Available at: <http://files.eric.ed.gov/fulltext/ED370411.pdf> [Accessed 28 January 2016].

Gu, P.Y. and Johnson, R.K., 1996. Vocabulary Learning Strategies and Language Learning Outcomes. *Language Learning*, 46 (4), pp. 643-79.

Gu, P.Y., 1996. Robin Hood in SLA: What Has the Learning Strategy Researcher Taught Us? *Asian Journal of English Language Teaching*, 6(1), pp. 1-29.

Gu, P.Y., 2003a. Fine Brush and Freehand: The Vocabulary-Learning Art of Two Successful Chinese EFL Learners. *TESOL Quarterly*, 37(1), pp. 73-104.

Gu, P.Y., 2003b. Vocabulary Learning in a Second Language: Person, Task, Context and Strategies. *The Electronic Journal for English as a Second Language,* [online] 7 (2) Available at: <http://www.tesl-ej.org/wordpress/issues/volume7/ej26/ej26a4/> [Accessed 03 August 2016].

Gu, P.Y.,2005. *Vocabulary Learning Strategies in the Chinese EFL Context*. Singapore: Marshall Cavendish International Private Limited.

Gu, P.Y., 2010. Learning strategies for vocabulary development. *Reflections on English Language Teaching*, *9*(2), pp.105-118. Available at: <http://www.nus.edu.sg/celc/research/books/relt/vol9/no2/105to118_gu.pdf> [Assessed 03 August 2016].

Gu, P.Y., 2012a. Learning strategies: Prototypical core and dimensions of variation. *Studies in Self-Access Learning Journal*, 3(4), pp. 330-56.

Gu, P.Y., 2012b. Vocabulary learning strategies. In C. A. Chapelle, ed. 2013. *The encyclopaedia of applied linguistics*. Oxford: Wiley-Blackwell.

Gu, Y. 2015. *Vocabulary Guessing Strategies*. The Encyclopaedia of Applied Linguistics. Pp 1-7.

Guadagnoli, E. and Velicer, W.F., 1988. Relation of sample size to the stability of component patterns. *Psychological Bulletin*, 103(2), pp.265-75.

Hair, J.F.J., Black, W.C., Babin, B.J., and Anderson, R.E., 2010. *Multivariate Data Analysis. A Global Perspective*. 7th ed. New Jersey: Pearson.

Hammond, C., 2005. The Wider Benefits of Adult Learning: An Illustration of Advantages of Multi-Method Research. *International Journal of Social Research Methodology*, 8 (3), pp. 239-55.

Hamzah, M. S. G., Kafipour, R., and Abdullah, S. K., 2009. Vocabulary learning strategies of Iranian undergraduate EFL students and its relation to their vocabulary size. *European Journal of Social Sciences*, 11(1), pp. 39-50.

Harris, V. and Snow, D., 2004.*Doing it for themselves*: *focus on learning strategies and vocabulary building*. London: CILT.

Hart, C., 1998. *Doing a Literature Review*. London: Sage.

Haynes, M., 1993. Patterns and perils of guessing in second language reading. In T. Huckin, M. Haynes and J. Coady, eds. 1993. *Second Language Reading and Vocabulary Learning*. Norwood: Ablex. Pp. 46-64.

Henriksen, B., 1999. Three Dimensions of Vocabulary Development. Studies in Second Language Acquisition, 21 (2), pp. 303-17.

Henson, R.K. and Roberts, J.K., 2006. Use of exploratory factor analysis in published research: common errors and some comment on improved practice. *Educational and Psychological Measurement*, 66(3), pp.393-416.

Higa, M., 1963. Interference effects of intralist word relationships in verbal learning. *Journal of Verbal Learning and Verbal Behaviour*, 2(2), pp. 170-75.

Higbee, K.L., 1979. Recent research on visual mnemonics: Historical roots and educational fruits. *Review of Educational Research*, 49(4), pp. 611-29.

Hogarty, K., Hines, C., Kromery, J., Ferron, J. and Mumford, K., 2005. The Quality of Factor Solutions in Exploratory Factor Analysis: The Influence of Sample Size, Communality, and Over determination. *Educational and Psychological Measurement*, 65(2), pp.202-26.

Horst, M., 2005. Learning L2 vocabulary through extensive reading: A measurement study. *Canadian Modern Language Review,* 61(3), pp.355-82.

Horwitz, E.K., 1987. Surveying student beliefs about language learning. In A. Wenden, and J. Rubin, eds. 1987. *Learner Strategies in Language Learning*. New Jersey: Prentice-Hall. Pp.119-29.

Horwitz, E.K., 1988. The beliefs about language learning of beginning university foreign language students. *The Modern Language Journal*, 72 (3), pp. 283-94.

Howitt, D., Cramer, D., 2011. *Introduction to Research Methods in Psychology*. 3rd ed. Essex: Pearson Education Limited.

Hsien-jen, C., 2001. The Effects of Dictionary Use on the Vocabulary Learning Strategies Used by Language Learners of Spanish. Available at: < http://files.eric.ed.gov/fulltext/ED471315.pdf> [Accessed 17 April 2017].

Huckin, T, Haynes, M and Coady, J. eds.,1993. *Second Language Reading and Vocabulary*. Norwood: Ablex.

Huckin, T. and Coady, J. 1999. Incidental vocabulary acquisition in a second language: A review. *Studies in Second Language Acquisition*, 21, (2), pp.181-93.

Hughes, A., 2003.Testing for language teachers. Cambridge: Cambridge University Press.

Hulstijn, J.H., 1993. When do foreign-language readers look up the meaning of unfamiliar words? The influence of task and learner variables. *The Modern Language Journal*, 77(2), pp. 139-47.

Hutcheson, G.D. and Sofroniou, N., 1999. *The multivariate social scientist: Introductory statistics using generalized linear models*. Sage.

Hwang, K. and Nation, I.S.P., 1995. Where would general service vocabulary stop and special purposes vocabulary begin? *System,* 23(1), pp. 35-41. Available at: <http://www.victoria.ac.nz/lals/about/staff/publications/paul-nation/1995-Hwang-Special-purposes.pdf> [Accessed 12 March 2014].

Institute of Chartered Accountants of Pakistan (ICAP) Available at <https://www.icap.org.pk/become-ca/why-chartered-accountancy/> [Accessed 21 April 2017].

Jack, B., Clarke. A., 1998. The purpose and use of questionnaires in research. *Professional Nurse*, 14(3), pp. 176-79.

Joe, A., 1998. What effects do text-based tasks promoting generation have on incidental vocabulary acquisition? *Applied Linguistics*, 19, (3), pp.357-77.

Johnson, R.B. and Christensen, L., 2004. *Education Research*.2nd ed. Bosten: Allyn and Bacon.

Jolliffe, I.T., 1986. *Principal Component analysis*. New York: Springer.

Kaiser, H.F., 1960. The application of electronic computers to factor analysis. *Educational and psychological Measurement*, 20(1), pp141-51.

Kaiser, H.F., 1974. An index of factorial simplicity. *Psychometrika*, 39(1), pp.31-36.

Kafipour, R.; Yazdi, M.; Soori, A. and Shokrpour, N., 2011. Vocabulary levels and vocabulary learning strategies of Iranian undergraduate students. *Studies in Literature and Language*, 3(3), pp. 64-71.

Kalajahi, S.A.R. and Pourshahian, B., 2012. Vocabulary learning strategies and vocabulary size of ELT students at EMU in Northern Cyprus. *English Language Teaching*, *5*(4), pp.138-49.

Karim, K., 2010. First language (L1) influence on second language (L2) reading: The role of transfer. *Working Papers of the Linguistics Circle*, *17*, pp.49-54.

Kass, R.A. and Tinsley, H. E.A., 1979. Factor Analysis. *Journal of Leisure Research*, 11(2), pp.120-38.

Kazi, S.A. and Iqbal, M.H., 2011. Use of Language Learning Strategies by Students at Higher Secondary Level in Pakistan. *International Journal of Social Sciences and Education*, 1(4), pp. 557-74.

Kelly, P., 1990. Guessing: No substitute for systematic learning of lexis. *System*, 18, pp. 199-207.

Kerka, S., 2000. Incidental learning. *Trends and Issues Alert no.18*. Available at: <http://www.calpro-online.com/eric/docs/tia00086.pdf> [Accessed 06 February 2017].

Klassen, A.C., Creswell, J., Plano Clark, V.L., Smith, K.C. and Meissner, H.I., 2012. Best practices in mixed methods for quality of life research. *Quality of Life Research*, *21*(3), pp.377-80.

Kline, P., 1993. *The handbook of Psychology Testing.* London: Routledge.

Kline, P., 1994. *An Easy Guide to Factor Analysis*. London: Routledge.

Kline, P., 1999. *The Handbook of Psychology Testing.* 2nd ed. London: Routledge.

Knight, S., 1994. Dictionary use while reading: The effects on comprehension and vocabulary acquisition for students of different verbal abilities. *The Modern Language Journal*, 78 (3), pp.285-99.

Kojic-Sabo, I. and Lightbown, P.M., 1999. Students' approaches to vocabulary learning and their relationship to success. The Modern Language Journal, 83(2), pp.176-92.

Komol, T. and Sripetpun, W.,2011. Vocabulary learning strategies employed by undergraduate students and its relationship to their vocabulary knowledge. *Proceedings of the 3rd International Conference on Humanities and Social Sciences*, Prince of Songkla University.

Kornhauser, A., Sheatsley, B., 1976. Questionnaire construction and interview procedure. In C. Sellitiz., S, Wrightsman., and W. Cook, eds. *Research Methods in Social Relations.* New York: Rinehart and Winston.

Kothari, C.R., 2004. *Research Methodology.* 2nd ed. New Delhi: New age International (p) Limited Publishers.

Krale, S., 1996. *Interviews: An Introduction to Qualitative Research Interviewing*. Thousand Oaks: Sage.

Krale, S., 2006. Dominance through interviews and dialogues. *Qualitative Inquiry*, 12(3), pp. 480-500.

Krashen, D, S., 1981. *Second Language Acquisition and Second Language Learning*. Oxford: Pergamon Press Ltd.

Krashen, D, S., 1989. We acquire vocabulary and spelling by reading: Additional evidence for the input hypothesis. *The Modern Language Journal*, 24 (3), pp.237-70.

Kucera, H. and Francis, W.N., 1967. Computational analysis of Present-Day American English. Providence, Rhode Island: Brown University Press.

Kudo, Y. (1999). L2 vocabulary learning strategies. Honolulu: University of Hawai'i, Second Language Teaching and Curriculum Center. Available at: <http://www.lll.hawaii.edu/nflrc/NetWorks/NW14/> [Accessed 14 May 2014].

Lado, R., Baldwin, B. and Lobo, F. 1967. *Massive vocabulary expansion in a foreign language beyond the basic course: the effects of stimuli, timing and order of presentation.* Washington, D.C.: Department of Health, Education, and Welfare. Project No. 5-1095.

Larsen-Freeman, D., and Long, M., 1991. *An Introduction to Qualitative Research Interviewing*. London: Sage Publications.

Laufer, B. and Nation, I.S.P., 1995. Vocabulary size and use: Lexical richness in L2 written production. *Applied linguistics,* 16 (3), pp. 307-22.

Laufer, B. and Paribakht, T.S., 1998. The relationship between passive and active vocabularies: Effects of language learning context. *Language learning*, *48*(3), pp.365-91.

Laufer, B. and Nation, I.S.P., 1999. A vocabulary-size test of controlled productive ability. Language Testing, 16 (1), pp.33-51.

Laufer, B. and Hill, M., 2000. What lexical information do L2 learners select in a CALL dictionary and how does it affect word retention? *Language Learning Technology*, 3 (2), pp.58-76.

Laufer, B. and Hulstijn, J., 2001. Incidental vocabulary acquisition in a second language: The construct of task-induced involvement. *Applied linguistics*, *22*(1), pp.1-26.

Laufer, B., 2010. Form focused instruction in second language vocabulary learning. In R. Chacón-Beltrán, C. Abello-Contesse, M. M. Torreblanca-López and M. D. LópezJiménez, eds. *Further insights into non-native vocabulary teaching and learning*. Toronto: Multilingual Matters. Pp. 15-27.

Laufer, D. and Jung, J.M., 2010. Incorporating regulatory focus theory in product recall communications to increase compliance with a product recall. *Public Relations Review*, *36*(2), pp.147-51.

Lawson, M., and Hogben, D. ,1996. The vocabulary-learning strategies of foreign language students. *Language Learning*, 46(1), pp.101-35.

Lawson, M.J., Hogben, D., 1998. Learning and Recall of Foreign-Language Vocabulary: Effects of a Keyword Strategy for Immediate and Delayed Recall. *Learning and Instruction*, 8 (2), pp. 179-94.

Leech, N.L., Dellinger, A.B., Brannagan, K.B. and Tanaka, H., 2010. Evaluating mixed research studies: A mixed methods approach. *Journal of mixed methods research*, *4*(1), pp.17-31.

Levenstone, E., 1979. Second Language Vocabulary Acquisition: Issues and problems. *Interlanguage Studies Bulletin*, 4(2), pp. 147-60.

Levitzky-Aviad, T. and Laufer, B., 2013. Lexical properties in the writing of foreign language learners over eight years of study: Single words and collocations. *EUROSLA Monographs Series*, 2, 127–148. Available at: <http://www.eurosla.org/monographs/EM02/Levitzky-Aviad-Laufer.pdf> [Accessed 9 June 2016].

Lewis, M., 1997. *Implementing the Lexical Approach: Putting Theory into Practice*. Hove: Language Teaching Publications.

Lewis, M.P. ed., 2009. *Ethnologue: Languages of the World*. 16th edition. Dallas: SIL International. Available at < http://www.ethnologue.com/>. [Accessed 17 September 2017].

Li, J. and Schmitt, N., 2009. The acquisition of lexical phrases in academic writing: a longitudinal case study. *Journal of Second Language Writing,* 18 (2), pp. 85-102.

Lip, P., 2009. Investigating the Most Frequently Used and Most Useful Vocabulary Language Learning Strategies among Chinese EFL Postsecondary Students in Hong Kong. *Electronic Journal of Foreign Language Teaching*, 6(1), pp.77-87.

Liu, N. and Nation, I.S.P., 1985. Factors affecting guessing vocabulary in context, *RELC journal*, 16 (1), pp.33-42.

Luppescu, S. and Day, R.R., 1993. Reading dictionaries, and vocabulary learning. *Language Learning*, 43 (2), pp. 263-87.

Lynch, B.K., 2003. *Language Assessment and Programme Evaluation*. Edinburgh: Edinburgh University Press.

Macaro, E., 2001. *Learning Strategies in Foreign and Second Language Classrooms*. London: Continuum.

MacCallum, R.C., Widaman, K.F., Zhang, S. and Hong, S., 1999. Sample size in factor analysis. *Psychological Methods*, 4(1), pp.84-99.

Mackey, A. and Gass, M.S., 2005. *Second language research*: *methodology and design.* New Jersey: Lawrence Erlbaum Associates, Inc.

Mahboob, A., 2009. English as an Islamic language: A case study of Pakistani English. *World Englishes,* 28(2)**,** pp.175-89.

Maley, A.,1987. Poetry and song as effective language-learning activities. In W.M.Rivers, ed.1987. *Interactive Language Teaching*. Cambridge: Cambridge University Press. Pp 93-109.

Mallow, J.D., Reeder, K. and Forster, E., 1996. Using time-series research designs to investigate the effects of instruction on SLA. *Studies in Second Language Acquisition*, 18 (3), pp. 325-50.

Martinez, R. 2011. Putting a test of multiword expressions to a test. Paper presented at *the IATEFL Testing, Evaluation and Assessment Conference (TEA SIG)*, University of Innsbruck.

McCarthy, M.J., 1990. *Vocabulary*. Oxford: Oxford University Press.

McCrostie, J.,2007. Examining Learner Vocabulary Notebooks. *ELT Journal*, 61(3), pp.246 -55.

McKeown, M. G., Beck, I. L., Omanson, R. C., and Pople, M. T. ,1985. Some effects of the nature and frequency of vocabulary instruction on the knowledge and use of words. *Reading Research Quarterly*, 20, pp. 522-35.

McLean, S and Kramer, B., 2015. The Creation of a New Vocabulary Levels Test. *Shiken*, 19(2), pp. 1-11.

Meara, P., 1980. Vocabulary acquisition: A neglected aspect of language learning. *Language Teaching and Linguistics Abstracts*, 13 (4), pp.221-46.

Meara, P., 1984. The study of lexis in interlanguage. In A. Davies, C. Criper and A.P.R. Howatt, eds. 1984. *Interlanguage*. Edinburgh: Edinburgh University Press. Pp.225-35.

Meara, P. and Ingle, S., 1986. The formal representation of words in an L2 speaker's lexicon. *Second Language Research*, 2 (2), pp.160-71.

Meara, P. and Jones, G., 1987. Tests of vocabulary size in English as a foreign language. *Polyglot*, 8(1), pp. 1-40.

Meara, P., 1992. *EFL Vocabulary Tests*. University College Swansea: Centre for Applied Language Studies. Available at:< http://www.lognostics.co.uk/vlibrary/meara1992z.pdf> [Accessed 09 June 2016].

Meara, P., 1996. The classical research in L2 vocabulary acquisition. In G. Anderman and M. Rogers, eds. 1996. *Words, Words, Words: The Translator and the Language Learner*. Pp. 27-40.

Meara, P., 1997. Towards a new approach to modelling vocabulary acquisition. In Schmitt, N. and McCarthy, M. Eds. *Vocabulary: Description, Acquisition and Pedagogy.* Cambridge: Cambridge University Press. Pp. 109-21.

Meara, P. and Milton, J., 2003. *X_Lex, The Swansea Levels Test*. Newbury: Express.

Medani, O. A., 1988. Vocabulary learning strategies. In Paul M. Meara. ed. *Beyond Words*. Cambridge: Cambridge University Press. Pp.52-66.

Memon, G.R., 2007. Education in Pakistan: The key issues, problems and the new challenges. *Journal of Management and Social Sciences*, *3*(1), pp.47-55.

Menard, S., 2002. *Longitudinal Research*. 2nd ed. Calif: Sage.

Miller, T., 2009. Mapping the Global Muslim Population. Washington DC: The Pew Forum. Available at <http://pewforum.org/uploadedfiles/Topics/Demographics/Muslimpopulation.pdf>. [Accessed 17 September 2017].

Milroy, L. and Gordon, M., 2003. *Sociolinguistics: Method and Interpretation*. Oxford: Blackwell.

Milton, J., and Meara, P., 1995. How periods abroad affect vocabulary growth in a foreign language. *ITL Review of Applied Linguistics*, (107-08), pp. 17-34.

Milton, J., 2006. Language lite: learning French vocabulary in school. *Journal of French Language Studies,* 16(2), pp. 187–205.

Milton, J., 2007. Lexical profiles, learning styles and the construct validity of lexical size test. In H. Daller., J. Milton., and J. T. Daller., eds. 2007. *Modelling and Assessing Vocabulary Knowledge*. Cambridge: Cambridge University press. Pp. 47-58.

Milton, J., 2008. Vocabulary uptake from informal learning tasks. *Language Learning Journal*, 36(2), pp. 227-38.

Milton, J., 2009. *Measuring Second Language Vocabulary Acquisition*. Bristol: Multilingual Matters.

Milton, J., 2010. The role of classroom and informal vocabulary input in growing a foreign language lexicon. *Journal of Applied Linguistics*, 27, pp. 59-80.

Milton, J. and Alexiou, T., 2012. Vocabulary input, vocabulary uptake and approaches to language teaching. The Language Learning Journal, 40 (1), pp.1-5. Available at: <http://dx.doi.org/10.1080/09571736.2012.658218> [Accessed 29 June 2012].

Milton, J., Jonsen, S., Hirst, S., and Lindenburn, S., 2012. Foreign language vocabulary development through activities in an online 3D environment. *The Language Learning Journal*, 40(1), pp. 99–112. Available at: <http://dx.doi.org/10.1080/09571736.2012.658229> [Accessed 28 June 2012].

Milton, J., and Donzelli, G., 2013. The lexicon. In J. Herschensohn, and M. Young-Scholten, eds. *Cambridge handbooks in language and linguistics: The Cambridge handbook of second language acquisition*. Cambridge: Cambridge University Press. Available at: <http://0search.credoreference.com.brum.beds.ac.uk/content/entry/cuphseclaq/the_lexicon/0> [Accessed 20 April 2015].

Mizumoto, A. and Takeuchi, O., 2008. Exploring the driving forces behind TOEIC scores: Focusing on vocabulary learning strategies, motivation, and study time. *JACET Journal*, 46, pp 17-32.

Moir, J. and Nation, I.S.P., 2002. Learners' use of strategies for effective vocabulary learning. *Prospect*, 17(1), pp.15-35.

Mongkol, N., 2009. A Study of Vocabulary Learning Strategies of the First and Second Year Students from English Department at Phetchaburi Rajabhat University. *Humanities Journal*,*16*(1), pp.130-44. Available at: < https://www.tci-thaijo.org/index.php/abc/article/view/64237> [Accessed 19 June 2015].

Morse, J.M. and Richards, L., 2002. *Readme First for a User's Guide to Qualitative Research*. Thousand Oaks: Sage.

Myers, R., 1990. *Classical and modern regression with applications*. 2nd ed. Boston: Duxbury.

Nagy, W., 1997. On the role of context in first- and second-language vocabulary learning. In N. Schmitt and M. McCarthy, eds. *Vocabulary: Description, acquisition, and pedagogy.* Cambridge: Cambridge University Press. Pp. 64-83.

Nagy, W.E., Herman, P. and Anderson, R.C., 1985. Learning words from context. *Reading Research Quarterly*, 20 (2), pp.233-53.

Naiman, N., Frohlich, M., Stern, H.H. and Todesco, A., 1978. The good language learner. Research in Education Series 7. Ontario: Ontario Institute for Studies in Education.

Nakatsuhara, F., 2009. *Conversational Styles in Group Oral Tests: How is the Conversation Co-constructed?* PhD. University of Essex. Available at: <http://ethos.bl.uk/OrderDetails.do?did=1&uin=uk.bl.ethos.499803> [Accessed on 06 October 2015].

Nation, I.S.P., 1982. Beginning to learn foreign vocabulary: A review of the Research. *RELC Journal*, 13(1), pp.14-36.

Nation, I.S.P., 1983. Testing and teaching vocabulary. *Guidelines,* 5(1), pp. 12-25. Available at: <http://www.victoria.ac.nz/lals/about/staff/publications/paul-nation/1983-Testing-and-teaching.pdf> [Accessed 06 January 2017].

Nation, I.S.P., 1990. *Teaching and Learning Vocabulary*. Boston: Heinle and Heinle Publishers.

Nation, I.S.P., 1994. Review of working with words, teaching and learning vocabulary in action, and vocabulary. *System*, 22 (2), pp. 283-87.

Nation, I. S.P., 1997. The language learning benefits of extensive reading. *The Language Teacher,* 21(5), pp. 13-16.

Nation, P. and Waring, R., 1997. Vocabulary size, text coverage and word lists. *Vocabulary: Description, acquisition and pedagogy*,*14*, pp.6-19.

Nation, I.S.P., 2001. *Learning vocabulary in another language*. Cambridge: Cambridge University Press.

Nation, I.S.P. and Beglar, D., 2007. A vocabulary size test. *The Language Teacher*, 31(7), pp.9-13.

Nation, I.S.P., and Gu, P.Y., 2007. Focus on vocabulary. Sydney, Australia: National Centre for English Language Teaching and Research, Macquarie University.

Nation, I.S.P., 2008. *Teaching vocabulary: Strategies and Techniques*. Boston: Heinle Cengage Learning.

Nation, P., Meara, P., 2010. Vocabulary. In Schmitt, N, ed. 2010. *An Introduction to Applied Linguistics*. Croydon: Routledge. Pp. 34-52.

Nation, I.S.P., 2011. *Researching and Analysing Vocabulary*. Boston: Heinle Cengage Learning.

Nation, I.S.P., 2015. Principles guiding vocabulary learning through extensive reading. *Reading in a Foreign Language*, *27*(1), pp.136-45.

Nemati, A., 2008. Use and ranking of vocabulary learning strategies by Indian EFL learners*. Language in India*, 8(4), pp.2-11.

Nesi, H. and Meara, P., 1991. How using dictionaries affects performance in multiple-choice tests. *Reading in a Foreign Language*, 8(1), pp. 631-43.

Neubach, A. and Cohen, A.D., 1988. Processing strategies and problems encountered in the use of dictionaries. Dictionaries: *Dictionaries: Journal of the Dictionary Society of North America*, 10 (1), pp.1-19.

Newsom, J., 2006. *Post Hoc Tests*. [pdf] Portland State University. Available at:<www.upa.pdx.edu/IOA/newsom/da1/ho_posthoc.doc> [Assessed 24 July 2016].

Nunnally, J.C., 1978. *Psychometric Theory*. New York: McGraw-Hill.

Nuttall, C., 1996. *Teaching Reading Skills in a Foreign Language.* London: Heinemann.

O,Malley, J.M., Chamot,A.U., Stewner-Manzares, G., Kupper, L. and Russo, R.P., 1985. Learning Strategies used by beginning and intermediate ESL students. *Language Learning*, 35 (1), pp. 21-46.

O,Malley, J.M., Chamot,A.U., 1990. *Learning Strategies in Second Language Acquisition*. Cambridge: Cambridge University press.

Olejnik, S., Li, J., Supattathum, S., and Huberty, C., 1997. Multiple Testing and Statistical Power with Modified Bonferroni Procedures. *Journal of Educational and Behavioral Statistics, 22*(4), pp.389-406. Available at: < http://0-www.jstor.org.brum.beds.ac.uk/stable/1165229> [Assessed 24 July 2016]

Oppenheim, A., 1992. *Questionnaire Design, Interviewing and Attitude Measurement*. London: Pinter.

Ortega, L. and Iberri-Shea, G., 2005. Longitudinal Research in Second Language Acquisition. *Annual Review of Applied Linguistics*. 25, pp.26-45.

Oxford, R. and Nyikos, M, 1989. Variables affecting choice of language learning strategies by university students. *Modern Language Journal*, 73(3), pp.291-300.

Oxford, R.L., 1990. *Language Learning Strategies: What Every Teacher Should Know*. Boston: Newbury House.

Oxford, R. and Crookall, D., 1990. Vocabulary learning: A critical analysis of techniques. *TESL Canada Journal*, *7*(2), pp.09-30.

Oxford, R.L. and Scarcella, R.C., 1994. Second language vocabulary learning among adults: State of the art in vocabulary instruction. *System*, *22*(2), pp.231-43.

Paivio, A. and Desrochers, A., 1981. Mnemonic techniques in second-language learning. *Journal of Educational Psychology*, 73 (6), pp. 780-95.

Pallant. J., 2005. *SPSS SURVIVAL MANUAL*. 2nd ed. Sydney: Allen and Unwin.

Paribakht, T.S. and Wesche, M., 1997. Vocabulary enhancement activities and reading for meaning in second language vocabulary acquisition. In J. Coady and T. Huckin, eds. 1997. *Second Language Vocabulary Acquisition: A Rationale for Pedagogy*. Cambridge: Cambridge University Press. Pp. 174-99.

Paribakht, T.S., & Wesche, M.B., 1993. The relationship between reading comprehension and second language development in a comprehension-based ESL program. *TESL Canada Journal,* 11(1), pp. 9-29.

Parry, K., 1991. Building a vocabulary through academic reading. *TESOL Quarterly*, 25 (4), pp. 629-53.

Parry, K., 1993. The social construction of reading strategies: New directions for research. *Journal of Research in Reading*, 16 (2), pp.148-58.

Parry, K. 1997. Vocabulary and Comprehension: Two portraits. In J. Coady and T. Huckin, eds. 1997. *Second Language Vocabulary Acquisition: A Rationale for Pedagogy*. Cambridge: Cambridge University Press. Pp.55-68.

Patton, M.Q., 2002. Qualitative Research and Evaluation Methods. 3rd ed. Thousand Oaks: Sage.

Perera, K., 1984. *Children's Writing and Recording,* Oxford: Basil Blackwell.

Peter, S., 1987. Interactive outside the classroom: using community. In W.M. Rivers, ed.1987. *Interactive language teaching*. Cambridge: Cambridge University Press. Pp.170-76.

Pett, M.A., Lackey, N.R., and Sullivan, J.J., 2003. *Making Sense of Factor Analysis: The use of factor analysis for instrument development in health care research. California*: Sage Publications Inc.

Pimsleur, P., 1967. A Memory Schedule. *Modern Language Journals*, 51 (2), pp.73-5.

Pitt, M., White, H. and Krashen, S., 1989. Acquiring Second Language Vocabulary through reading. *Reading in a Foreign Language*, 5 (2), pp. 251-5.

Pourshahian, B., Azarfam, A.Y. and Kalajahi, S.A.R., 2012. Does applying vocabulary learning strategies vary based on gender? The case of Turkish EFL learners. *Journal of Research on Humanities and Social Sciences*, 2(4), pp.1-10. Available at: < file:///C:/Users/user1/Downloads/1790-3735-1-PB%20(1).pdf> [Accessed 20 March 2015].

Pressley, M., Levin, J.R. and Miller, G.E., 1982. The keyword method compared to alternative vocabulary learning strategies. *Contemporary Educational Psychology*, 7(1), pp. 50-60.

Prince, P., 1996. Second Language Vocabulary Learning: The Role of Context versus Translations as a Function of Proficiency. *Modern Language Journal,* 80 (4), pp. 478-93.

Punch, k. F., 2005. *Introduction to Social Research*.2nd ed. Thousand Oaks: Sage.

Rahman, T., 1995. Language and politics in a Pakistan province: The Sindhi language movement. *Asian Survey,* 35, 1005-1016.

Rahman, T., 1997. The medium of instruction controversy in Pakistan. *Journal of Multilingual and Multicultural Development,* 18(2)**,** pp.145-154.

Rahman, T. 1999. *Language, Education and Culture*. Oxford and Karachi: Oxford University Press.

Rahman, T., 2006. Language policy, multilingualism and language vitality in Pakistan. *Trends in Linguistics Studies and Monographs,* 175, pp.1-15.

Rahman, T., 2008. Language policy and education in Pakistan. In *Encyclopaedia of Language and Education*. Springer. Pp.383-92.

Rahman, T., 2009. Language ideology, identity and the commodification of language in the call centers of Pakistan. *Language in Society,* 38(02)**,** pp.233-58.

Rattray, J., Jones, M. C., 2007. Essential elements of questionnaire design and development*. Journal of Clinical Nursing*, 16(2), pp. 234-43.

Read, J., 1988. Measuring the vocabulary knowledge of second language learners. *RELC Journal*, 19 (2), pp. 12-25.

Read, J., 1998. Validating a test to measure depth of vocabulary knowledge. In: A. Kunan, ed. Validation in Language Assessment. Mahwah: Lawrence Erlbaum. Pp.41-60.

Read, J., 2000. *Assessing Vocabulary*. Cambridge: Cambridge University Press.

Rieder, A., 2003. Implicit and explicit learning in incidental vocabulary acquisition. *Views*, *12*(2), pp.24-39.

Renandya, W.A., 2007. The power of extensive reading. *RELC Journal*, *38*(2), pp.133-49.

Research Ethics, 2016. University of Bedfordshire, Research. [online] Available at: <http://www.beds.ac.uk/research-ref/rgs/research-ethics> [Accessed 23 July 2016].

Richards, J., Platt, J, and Platt, H., 2000. *Longman Dictionary of Language Teaching and Applied Linguistics*. Beijing: Foreign Language Teaching and Research Press.

Richards, J.C. and Renandya, A.W., 2002.*Methodology in language Teaching*. Cambridge: Cambridge University Press.

Richards, J.C., 1976. The role of vocabulary teaching. *TESOL Quarterly*, 10 (1), pp. 77-89.

Richards, K., 2003. *Qualitative Inquiry in TESOL*. Basingstoke: Palgrave Macmillan.

Richards, L., 2005. Handling Qualitative Data: A Practical Guide. London: Sage.

Ritchie, J, and Lewis, J., 2003. *Qualitative Research Practice: A Guide for Social Science Students and Researchers*. London: Sage

Rose, H., 2012. Reconceptualising strategic learning in the face of self-regulation: Throwing language learning strategies out with the bathwater. *Applied Linguistics*, 33 (1), pp. 92-98.

Rosenthal, R., 1991. Meta-analytic procedures for social research. 2nd ed. Newbury Park: Sage.

Rossman, G.B. and Wilson, B.L., 1985. Numbers and Words: Combining Quantitative and Qualitative Methods in a Single Large-Scale Evaluation Study. *Evaluation Review*, 9(8), pp. 627-43.

Rubin, J., 1975. What the good language learner can teach us. *TESOL Quarterly*, 9(1), pp.14-51.

Rubin, J., 1987. Learner Strategies. In A. Wenden. and J. Rubin, eds. *Learners Strategies in Language learning.* New York: Prentice Hall. Pp.15-30.

Ruspini, E., 2002. *Introduction to Longitudinal Research*. London: Routledge.

Russell, P., 2013. *The Brain Book: know your own mind and how to use it*. London: Routledge.

Safian, N.H., Malakar, S. and Kalajahi, S.A.R., 2014. Exploring vocabulary learning strategies used by UPM TESL undergraduates. *Advances in Language and Literary Studies*, *5*(5), pp.1-4.

Sanaoui, R., 1992. Vocabulary learning and teaching in French as a second language classrooms. Unpublished doctoral dissertation. Toronto: University of Toronto, OISE.

Sanaoui, R., 1995. Adult learners' approaches to learning vocabulary in second languages. *Modern languages journal*, 79 (1), pp.15-28.

Sandelowski, M., 2003. Tables of Tableaux? The challenges of writing and reading mixed methods studies. In A. Tashakkori and C. Teddlie, eds. 2003. *Handbook of Mixed Methods in Social and Behavioural Research*. Thousand Oaks: Sage. Pp. 321-50.

Saragi, T., Nation, I.S.P. and Meister, G.F., 1978. Vocabulary learning and reading. *System* 6 (2), pp.72-78.

Sarani, A. and Kafipour, R., 2008. The study of language learning strategies use by Turkish and Kurdish EFL university students. *Language Forum*, 34(2), pp.173-188.

Satterfield, T., ELLIS, R., LOEWEN, S., ELDER, C., ERLAM, R., PHILP, J. and REINDERS, H., 2011. *Implicit and Explicit Knowledge in Second Language Learning, Testing and Teaching*. Bristol: Multilingual Matters.

Schatz, E.K. and Baldwin, R.S., 1986. Context clues are unreliable predictors of word meanings. *Reading Research Quarterly*, 21(3), pp. 439-53.

Schmitt, N. and Schmitt, D.R., 1993. Identifying and Assessing Vocabulary Learning Strategies. *Thai TESOL Bulletin*, *5*(4), pp.27-33.

Schmitt, N. and Schmitt, D., 1995. Vocabulary notebooks: Theoretical underpinnings and practical suggestions. *ELT Journal*, 49 (2), pp. 133-43.

Schmitt, N., 1995. A fresh approach to vocabulary: Using a word Knowledge framework. *RELC Journal*, 26 (1), pp. 86-94.

Schmitt, N., 1996. Uses and Abuses of Coefficient Alpha. *Psychological Assessment,* 8(4), pp, 350-53.

Schmitt, N., 1997. Vocabulary learning strategies. In N, Schmitt, and M. McCarthy, eds. *Vocabulary: Descriptive, Acquisition and Pedagogy*. Cambridge: Cambridge University Press. Pp. 199-227.

Schmitt, N. and Meara, P., 1997. Researching vocabulary through a word knowledge framework. *SSLA*, 20 (1), pp.17-36.

Schmitt, N., 1998. Tracking the Incremental Acquisition of Second Language Vocabulary: A Longitudinal Study. *Language Learning*, 48 (2), pp.281-317.

Schmitt, N., 2000. *Vocabulary in Language Teaching*. Cambridge: Cambridge University Press.

Schmitt, N., Schmitt, D. and Clapham, C., 2001. Developing and exploring the behaviour of two new versions of the vocabulary levels test. *Language Testing*, 18 (1), pp. 55-88.

Schmitt, N. ed., 2004. Formulaic Sequences. Amsterdam: John Benjamins.

Schmitt, N.,2007. Current trends in vocabulary learning and teaching. J. Cummins and C. Davison, eds. *The International Handbook of English Language Teaching*, Vol. 2. Springer. Available at: < http://www.norbertschmitt.co.uk/uploads/schmitt-n-(2007)-current-trends-in-vocabulary-learning-and-teaching-cummins-j-and-davison-c-(eds)-the-international-handbook-of-english-language-teaching-vol-2-springer.pdf> [Assessed 13/03/2016].

Schmitt, N., 2008. Review article: Instructed Second Language Vocabulary Learning. *Language Teaching Research*, 12 (3), pp. 329-63.

Schmitt, N., 2010a. *Researching Vocabulary*. London: Palgrave Macmillan.

Schmitt, N. ed., 2010b. *An Introduction to Applied Linguistics*. New York: Routledge Press.

Schmitt, D. and Schmitt, N., 2011. *Focus on Vocabulary: Mastering the Academic Word List*. 2nd edn. Harlow: Pearson Longman Press.

Scholfield, P., 1982. Using the English dictionary for comprehension. *TESOL Quarterly*, 16 (2), pp. 185-94.

Scholfield, P., 1991. Cluster analysis in the study of language variation - a review and an example., *Bangor Research Papers in Linguistics.* 3, pp. 55-88.

Schonell, F., Meddleton, I., Shaw, B., Routh, M., Popham, D., Gill, G., Mackrell, G., and Stephens, C., 1956. *A study of the oral vocabulary of adults*. Brisbane and London: University of Queensland Press/University of London Press.

Schumann, J. and Schumann, F., 1977. Diary of a language learner: an introspective study of second language learning. In H. Brown., C. Yorio and R. Crymes, eds. *TESOL,* 77, pp. 241-49.

Seibert, L.C. 1927. An experiment in learning French vocabulary. *Journal of Educational Psychology*,18(5), pp.294-309.

Şener, S., 2009.The relationship between vocabulary learning strategies and vocabulary size of Turkish EFL students. Available at: <http://yadem.comu.edu.tr/3rdeltkonf/spkr_sabriye_sener.htm> [Assessed 12 May 2010].

Seargeant, P. and Erling, E.J., 2011. The discourse of English as a language for international development. In: H. Coleman, ed. *Policy assumptions and practical challenges*. *Dreams and Realities: Developing Countries and the English Language*, London: British Council. Pp.248-67 Available at <http://www.teachingenglish.org.uk/transform/books/dreamsrealities-developing-countries-english-language>. [Accessed 13 May 2017].

Shamim, F., 2008. Trends, issues and challenges in English language education in Pakistan. *Asia Pacific Journal of Education*, *28*(3), pp.235-49.

Shiotsu, T and Weir, C. J., 2007. The Relative Significance of Syntactic Knowledge and Vocabulary Breadth in the Prediction of Second language Reading Comprehension Test Performance, *Language Testing*, 24(1), pp. 99-128.

Silverman, D. 2005. *Doing Qualitative Research,* 2nd ed. London: Sage.

Skehan, P., 1989. *Individual Differences in Second Language Learning*. London: Edward Arnold.

Stahl, S. A. and Fairbanks, M. M., 1986. The effects of vocabulary instruction: A model-based meta-analysis. *Review of Educational Research*, 56(1), pp.72–110.

Stapleton, J.H., 1995. *Linear Statistical Methods*. New York: John Willy & Sons, Inc.

Sternberg, R. J., 1987. Most vocabulary is learned from context. In M. G. McKeown and M. E. Curtis, eds. *The nature of vocabulary acquisition*. Hillsdale: Erlbaum. Pp. 89-106.

Stemler, S. E., Tsai, J., 2008. Best Practices in Interrater Reliability: Three Common Approaches. In J.W. Osborne.2008. *Best Practices in Quantitative Methods*. California: Sage Publications.Pp.3-45. Available at: <file:///C:/Users/user1/Downloads/Interrater%20Reliability%20_Combined.pdf > [Accessed 28 July 2016].

Stevens, J., 1996. *Applied multivariate statistics for the social science*. 3rd ed. Mahway: Lawrence Erlbaum.

Stevens, J., 2002. *Applied multivariate statistics for the social science*. 4th ed. New Jersey: Lawrence Erlbaum Associates. Inc.

Streiner, D.L., 2003a. Starting at the Beginning: An Introduction of Coefficient Alpha and Internal Consistency. *Journal of Personality Assessment*, 80(1), pp. 90-103.

Streiner, D.L., 2003b. Being Inconsistent About Consistency: When Coefficient Alpha Does and Doesn't Matter. *Journal of Personality Assessment,* 80(3), pp. 217-22.

Strevens, P.,1987. Interaction outside the classroom: using the community. In W.M. Rivers, ed.1987. *Interactive Language Teaching*. Cambridge: Cambridge University Press. Pp. 170-76.

Summers, D., 1988. The role of dictionaries in language learning. In R. Carter and M. McCarthy, eds. 1988. *Vocabulary and Language Teaching*. Pp.111-25.

Tabachnick, B.G., and Fidell, L.S., 2001. *Using Multivariate Statistics*. 4th ed. New York: Harper Collins.

Tabachnick,B.G., and Fidell, L.S., 2007. *Using Multivariate Statistics*. 5th ed. Boston: Pearson.

Teddlie, C. and Tashakkori, A., 2009. *Foundations of mixed methods research: Integrating quantitative and qualitative approaches in the social and behavioral sciences*. Sage.

Thompson, B., Daniel, L.G., 1996. Factor analytic evidence for the construct validity of scores: A historical overview and some guidelines. *Educational and Psychological Measurement*, 56(2), p.197-208.

Thornbury, S., 2002. *How to teach vocabulary*. London: Longman.

Thorndike, E.L., 1908. Memory for paired associates. *Psychology Review*, 15, pp.122-38.

Thorndike, E.L. and Lorge, I., 1944. The teacher's wordbook of 30,000 words. New York: Columbia University, Teachers College.

Tinkham, T., 1993. The effect of semantic clustering on the learning of second language vocabulary. *System*, 21 (3), pp. 371-80.

Tsai, C.C. and Chang, I.C., 2009, April. An examination of EFL vocabulary learning strategies of students at the University of Technology of Taiwan. In *International Forum of Teaching and Studies,* 5(2), pp. 32-38.

Tseng, W.T. and Schmitt, N., 2008. Towards a model of motivated vocabulary learning: A structural equation modelling approach. *Language Learning*, 58(2), pp. 357-400.

Tseng, W.T., Dornyei, Z. and Schmitt, N., 2006. A new approach to assessing strategic learning: The case of self-regulation in vocabulary acquisition. *Applied Linguistics*, 27(1), pp.78-102.

Tucker, L.R., MacCallum, R.C., 1997. Exploratory Factor Analysis. Unpublished manuscript, Ohio State University. Columbus. Available at: <http://www.unc.edu/~rcm/book/factor.pdf> [Accessed 01 September 2015]

UNDP (United Nations Development Programme). 2009. Overcoming Barriers: Human Mobility and Development. (Human Development Report 2009.) Basingstoke: Palgrave Macmillan. Available at <http://hdr.undp.org/en/media/HDR_2009_EN_Indicators.pdf> . [Accessed 17 March 2015].

UNDP (United Nations Development Programme). 2011. Sustainability and Equity: A Better Future for All. (Human Development Report 2011.) Basingstoke: Palgrave Macmillan. Available at <http://www.beta.undp.org/content/dam/undp/library/corporate/HDR/2011%20Global%20HD R/English/HDR_2011_EN_Complete.pdf>. [Accessed 17 March 2015].

University of Bedfordshire, 2016. Research Ethics Committee. [pdf] University of Bedfordshire. Available at <http://www.beds.ac.uk/__data/assets/pdf_file/0004/43951/EthicsGoodResPractandResMisconduct3.pdf> [Accessed 20 July 2016].

Urquhart, A. H., 1984. The Effect of Rhetorical Ordering on Readability. In J.C. Alderson and A.H. Urquhart, eds. *Reading in* a *Foreign Language,* London: Longman. Pp. 160-75.

Van, M.A., 2006. Validity evidence in a university group oral test. *Language Testing*, 23(4), p.411-40.

Vanderplank, R., 2016. *Captioned Media in Foreign Language Learning and Teaching*. Oxford: Macmillan

Van Zeeland, H. and Schmitt, N., 2013. Incidental vocabulary acquisition through L2 listening: A dimensions' approach. *System*, *41*(3), pp.609-24.

Velicer, W.F. and Fava, J.L., 1998. Affects of variable and subject sampling on factor pattern recovery. *Psychological methods*, *3*(2), p.231.

Viera, A. J. and Garrett, J. M., 2005. Understanding interobserver agreement: the kappa statistic. *Family Medicine,*37(5), pp.360-63.

Wang, P., 2009. The Inter-rater Reliability in Scoring Composition. *English Language Teaching,* 2(3), pp.39-43.

Wang, M., Koda, K. and Perfetti, C.A., 2003. Alphabetic and nonalphabetic L1 effects in English word identification: A comparison of Korean and Chinese English L2 learners. *Cognition*, *87*(2), pp.129-49.

WardHaugh, R., 1992. *An introduction to Sociolinguistics*. 2nd ed. Oxford: Basil Blackwell.

Webb, W.B., 1962. The effects of prolonged learning on learning. *Journal of Verbal Learning and Verbal Behaviour*, 1 (3), pp. 173-82.

Webb, S., 2007. The effects of repetition on vocabulary Knowledge. *Applied Linguistics*,28 (1), pp.46-65.

Wedell, M. 2011. More than just 'technology': English language teaching initiatives as complex educational changes. In H. Coleman (ed.), ***Dreams and Realities: Developing Countries and the English Language***, 269-290. London: British Council. Available at <http://www.teachingenglish.org.uk/transform/books/dreams-realities-developing-countriesenglish-language>. [Accessed 17 September 2017].

Weir, C. J., 1993. *Understanding and Developing Language Tests,* New York: Prentice Hall.

Wen, Q. and Johnson, R. K., 1997. Second language learner variables and English achievement: A study of tertiary level English majors in China. *Applied Linguistics*, 18(1), pp. 27-48.

Wenden, A. and Rubin, J. eds., 1987. *Learning strategies in language learning*. Prentice-Hall International.

West, M.P., 1953. *A General Service List of English Words.* London: Longmans, Green and Company.

White, C., 1996. Note-taking strategies and traces of cognition in language learning. *RELC Journal*, 27(1), pp.89-102.

Wiles, R., Heath, S., Crow, G. and Charles, V., 2005. *Informed Consent in Social Research: A Literature Review*. Southampton. ESRC. National Centre of Research Methods. Available at: < http://eprints.ncrm.ac.uk/85/1/MethodsReviewPaperNCRM-001.pdf > [Accessed 28 July 2016].

Wilkinson, L. and TFSI., 1999. Statistical Methods in Psychology Journals: Guidelines and Explanations. American Psychologist, 54(8), pp.594-604.

William, B., Brown, T. and Onsman, A., 2010. Exploratory factor analysis: a five-step guide for novices. *Australian Journal of Paramedicine,* 8 (3), pp. 1-13.

Wong-Fillmore, L. 1979. Individual differences in second language acquisition. In C.J. Filmore, W-S.Y. Wang and D. Kempler, eds. *Individual Differences in Language Ability and Language Behaviour*. New York: Academic Press. Pp. 3-25.

Wray, A., Trott, K. and Bloomer, A., 1998. *Projects in Linguistics: a practical guide to research language*. London: Arnold.

Wu, W. S., 2005. Use and helpfulness rankings of vocabulary learning strategies employed by EFL learners in Taiwan. *Journal of Humanities and Social Sciences*, 1(2), pp. 7-13.

Wu, X. and Wang, Q., 1998. Non-English major undergraduates' vocabulary learning strategies. Foreign Languages Teaching and Research, 1, pp.53-37.

Yamamori, K., Isoda, T., Hiromori, T. and Oxford, R. L., 2003. Using cluster analysis to uncover L2 learner differences in strategy use, will to learn, and achievement over time. *IRAL,* 41(4), pp. 381–409.

Yong, A.G. and Pearce, S., 2013. A Beginner's Guide to Factor Analysis: Focusing on Exploratory Factor Analysis. *Tutorial in Quantitative Methods for Psychology*,9(2), pp.79-94.

Zhang, B. and Li, C., 2011. Classification of L2 Vocabulary Learning Strategies: Evidence from Exploratory and Confirmatory Factor Analyses. *RELC Journal*, 42(2), pp.141-54.

Zhang, L. J., 2002. Exploring EFL reading as a metacognitive experience: Reader awareness and reading performance. *Asian Journal of English Language Teaching*, 12, pp. 65–90.

Zhang, X., and Lu, X. ,2015. The relationship between vocabulary learning strategies and breadth and depth of vocabulary knowledge. *The Modern Language Journal, 99*(4), pp.740–53.

Zimmerman, C., 1997. Do reading and interactive vocabulary instruction make a difference? An empirical study. *TESOL Quarterly*, 31(1), pp.121-40.

Appendices

Appendix 3.1 Productive Vocabulary Levels Test (PVLT)

1. I'm glad we had this opp to talk.

2. There are a doz eggs in the basket.

3. Every working person must pay income t.

4. The pirates buried the trea on a desert island.

5. Her beauty and ch had a powerful effect on men.

6. La of rain led to a shortage of water in the city.

7. He takes cr and sugar in his coffee.

8. The rich man died and left all his we to his son.

9. Pup must hand in their papers by the end of the week.

10. This sweater is too tight. It needs to be stret.

11. Ann intro her boyfriend to her mother.

12. Teenagers often adm and worship pop singers.

13. If you blow up that balloon any more it will bu.

14. In order to be accepted into the university, he had to impr his grades.

15. The telegram was deli two hours after it had been sent.

16. The differences were so sl that they went unnoticed.

17. The dress you're wearing is lov.

18. He wasn't very popu when he was a teenager, but he has many friends now.

1. He has a successful car as a lawyer.

2. The thieves threw ac in his face and made him blind.

3. To improve the country's economy, the government decided on economic ref .

4. She wore a beautiful green go to the ball.

5. The government tried to protect the country's industry by reducing the imp of cheap goods.

6. The children's games were amusing at first, but finally got on the parents' ner .

7. The lawyer gave some wise coun to his client.

8. Many people in England mow the la of their houses on Sunday morning.

9. The farmer sells the eggs that his he lays.

10. Sudden noises at night sca me a lot.

11. France was proc a republic in the 18th century.

12. Many people are inj in road accidents every year.

13. Suddenly he was thru into the dark room.

14. He perc a light at the end of the tunnel.

15. Children are not independent. They are att to their parents.

16. She showed off her sle figure in a long narrow dress.

17. She has been changing partners often because she cannot have a sta relationship with one person.

18. You must wear a bathing suit on a public beach. You're not allowed to bath na .

1. Soldiers usually swear an oa of loyalty to their country.

2. The voter placed the ball in the box.

3. They keep their valuables in a vau at the bank.

4. A bird perched at the window led.

5. The kitten is playing with a ball of ya.

6. The thieves have forced an ent into the building.

7. The small hill was really a burial mou.

8. We decided to celebrate New Year's E together.

9. The soldier was asked to choose between infantry and cav.

10. This is a complex problem that is difficult to compr.

11. The angry crowd sho the prisoner as he was leaving the court.

12. Don't pay attention to this rude remark. Just ig it.

13. The management held a secret meeting. The issues discussed were not disc to the workers.

14. We could hear the sergeant bel commands to the troops.

15. The boss got angry with the secretary and it took a lot of tact to soo him.

16. We do not have adeq information to make a decision.

17. She is not a child, but a mat woman. She can make her own decisions.

18. The prisoner was put in soli confinement.

1. The baby is wet. Her dia needs changing.

2. The prisoner was released on par.

3. Second year university students in the US are called soph.

4. Her favourite flowers were or.

5. The insect causes damage to plants by its toxic sec.

6. The evacu of the building saved many lives.

7. For many people, wealth is a prospect of unimaginable felic.

8. She found herself in a pred without any hope for a solution.

9. The deac helped with the care of the poor of the parish.

10. The hurricane whi along the coast.

11. Some coal was still smol among the ashes.

12. The dead bodies were mutil beyond recognition.

13. She was sitting on a balcony and bas in the sun.

14. For years waves of invaders pill towns along the coast.

15. The rescue attempt could not proceed quickly. It was imp

by bad weather.

16. I wouldn't hire him. He is unmotivated and indo.

17. Computers have made typewriters old-fashioned and obs.

18. Watch out for his wil tricks.

Appendix 3.2 Productive course vocabulary test (PCVT)

Write a sentence for each of the following words (prepositions, idioms and words) to show that you know what the word means and how it is used. You may choose a different form of the word if you wish.

Fall back	
Hanker after	
Hostile to	
Make away with	
Meddle with	
Put up with	
Weary of	
Infested with	
Excel in	
Entrust with	
Collide with	
Certain off	
Bear out	
Back out of	
Averse to	
Bear the brunt of	
Bring about	
Blow hot and cold	
Chip off the old block	
Cut a sorry figure	
Scot free	
Pull round	
Red tape	
Aghast	
Biennial	
Cantankerous	
Defray	
Elation	
Fiasco	
Homage	

Appendix 3.3 VLS questionnaire

You have been invited to participate in a research study, conducted by Nuzhat at Centre for Research in English Language Learning and Assessment at the University of Bedfordshire, UK, investigating English vocabulary learning. The study involves asking you to answer the questionnaire to gather relevant information for the project.

On the following pages, you will find statements related to learning vocabulary in English language. Please read each statement and mark the response by ticking the relevant option that tells how true the statement is in terms of what you actually do when you are learning English vocabulary.

1. **Never**
2. **seldom**
3. **Sometimes**
4. **Often**
5. **Always**

Please answer in terms of how well the statement describes you, not in terms of what you think you should do or what other people do.

Answer in reference to the vocabulary you are learning to learn English language. There are no right or wrong responses to these statements. Before starting the main questionnaire please fill in the background information. While signing the consent form if you want to participate, please print your name as well. This information is needed to match your questionnaire with your vocabulary tests, interviews and diary study sheets in order to investigate the factors in your vocabulary learning.

Your name will be removed and given a number to follow the anonymity and confidentiality.

If you wish to participate then please tick in the box below, print your name and sign.

I agree ☐

Name

Roll number

Signature **Institute**

Background Information

1. Name---------- 2. Roll Number ----------

3. Institute---------- 4. Age in years----------

5. Gender----------

6. First Language----------

7. Language(s) you speak at home----------

8. How long have you been studying English language?
---
9. What is your qualification? ----------

10. How important is it for you to become proficient in the English language? (Circle One)

A: Very Important B: Important C: Not so Important

9. Why do you want to learn the English language? (Check all that apply)

A. Interested in the language
B. Interested in the culture
C. Have friends who speak the language
D. Required to study English to complete CA.
E. Need it for my future career.
F. Need it for travel.
G. Other (list):----------

Curricular Vocabulary Learning Strategies	Never	seldom	Sometime	Often	Always
1.1) I know which words are important for me to learn. مجھے معلوم ھے کہ کونسے الفاظ میرے سیکھنے کے لیے اہم ھیں					
1.2) I have a sense of which word I can guess and which word I can not. مجھے سمجھ ھے کہ میں کونسے الفاظ کے مفہوم کا اندازہ لگا سکتا ھوں					
1.3) I look up words that I am interested in. میں ان الفاظ پر غور کرتا ہوں جن میں مجھے دلچسپی ہو					
1.4)When I meet a new word or phrase, I have a clear sense of whether I need to remember it. جب میں نئے الفاظ دیکھتا ہوں تو مجھے مکمل طور پر سمجھ ہے کہ آیا اِنکو یاد رکھوں یا نہیں					
1.5)I know what cues I should use in guessing the meaning of a particular word. میں جانتا ہوں کہ کونسے اشارے سے مجھے مخصوص الفاظ کے مفہوم کا اندازہ لگانا چاہیے					
1.6)I make a note of words that seem important to me. میں اُن الفاظ کو نوٹ کر لیتا ہوں جو مجھے اہم لگتے ہیں.					
1.7)Beside textbooks, I look for other readings that fall under my interest. درسی کتب کے علاوہ میں اپنی دلچسپی کے مطابق دوسرا مطالعہ بھی کرتا ھوں					
1.8) I would not learn what my English teacher does not tell us to learn. میں وہ یاد نہیں کرتا جو میرا انگریزی کا اُستاد یاد کرنے کو نہیں کہتا					
1.9) I only focus on things that are directly related to examinations. میں صرف اُنہی چیزوں پر توجہ دیتا ھوں جو میرے امتحانات سے تعلق رکھیں					
1.10)I would not care much about vocabulary items that my teacher does not explain in class. میں ایسے الفاظ پر توجہ نہیں دیتا جو میرا استاد کلاس میں بیان نہ کرے					
2.1) When I see unfamiliar word again and again, I look it up its meaning in dictionary. جب میں ناواقف لفظ بار بار دیکھتا ھوں تو اسکا مطلب لغات میں دیکھتا ھوں					
2.2) When I want to confirm my guess about a word, I look it up its meaning in dictionary. میں اپنے اندازہ کیے ہوئے لفظ کی تصدیق کرنےکے لیے اسکا مطلب لغات میں دیکھتا ہوں					
2.3) When not knowing a word prevents me from understanding a whole sentence or even a whole paragraph, I look it up its meaning in dictionary. جب کوئی نامعلوم لفظ ایک پورے فقرے کو یا پھر پورے پیراگراف کو سمجھنے میں روکاوٹ بنے تومیں اسکا مطلب لغات میں دیکھتا ہوں					
2.4) I look up the meaning of new words that are crucial to understanding of the sentence or paragraph in which it appears. میں ان نئے الفاظ کا مطلب دیکھتا ھوں جو فقرہ یا پیراگراف سمجھنے میں دشواری ہوں					
2.5) I pay attention to the examples of use when I look up a word in a dictionary. جب میں لغات میں لفظ دیکھتا ہوں تو میں اسکی مثالوں پر غور کرتا ہوں					
2.6)When I want to know more about a word that I already have some knowledge of, I look it up in dictionary. وہ لفظ جس کے بارے میں مجھے کچھ علم ہو جب میں اس لفظ کے بارے میں اور زیادہ جاننا چاہوں تو میں اسے لغات میں دیکھتا ہوں					
2.7)When I don't know the usage of a word I already have some knowledge of, I look it up in dictionary. وہ لفظ جس کے بارے میں مجھے کچھ علم ہو جب مجھے اسکا استعمال نہ آتا ہوتو میں اسے لغات میں دیکھتا ہوں۔					
2.8)When looking up a word in the dictionary, I read sample sentences illustrating various meaning of two or more words. جب میں لفظ کو لغات میں دیکھتا ہوں تو میں نمونے کے فقرے پڑتا ہوں					
2.9)I make a note when I want to help myself distinguish between the meaning of two or more words. میں دو یا دوسے زیادہ الفاظ کے مفہوم میں فرق کو یاد رکھنے کے لیےاسے نوٹ کر لیتا ہوں					
2.10) When I get interested in another new word in the definitions of the word I look up, I look up this word in dictionary as well. لغات میں لفظ کا مطلب دیکھتے ہوئے، جب مجھے، اُس لفظ کی تعریف میں جونئے لفظ استعمال ہوئے ہوتے ہیں، میں دلچسپی ہو جائے تو میں اسکا مطلب بھی لغات میں دیکھتا ہوں۔					
2.11) I try to integrate dictionary definitions of the new word into the context where the unknown word was met and arrive at a contextual meaning. میں نئے الفاظ کی لغات میں دی گئی دیفینیشن کوسیاق و سباق کے مطابق جہاں وہ نامعلوم لفظ آیا ہوتا ہے ضم کرنے کی کوشش کرتا ہوں۔					
3.1)I make vocabulary lists of new words that I meet. میں نئے الفاظ کی فہرستیں بنا لیتا ھوں					
3.2)I keep vocabulary lists of new words that I make. میں نئے الفاظ کی جو فہرستیں بناتا ہوں انکو اپنےریکارڈ میں رکھتا ہوں					

3.3)I go through my vocabulary lists several times until I am sure that I do not have any words on that list that I still do not understand. میں اپنی وکیبلری کی فہرستوں کا بغور تب تک تجزیہ کرتا رہتا ہوں جب تک یقین دہانی نہ کرلوں کہ فہرست میں کوئی لفظ ایسا نہیں جسے میں سمجھتا نا ہوں۔					
3.4)I make vocabulary cards and take them with me where ever I go. میں وکیبلری کے کارڈ بناتا ہوں اور جہاں بھی جائوں انہیں اپنے ساتھ لے جاتا ہوں					
3.5)I make regular and structured reviews of new words I have memorised. میں یاد کئے ہوئے نئے الفاظ کا باقائدہ اور تشکیلی جائزہ لیتا ہوں					
3.6)When I try to remember a word, I repeat it aloud to myself. میں لفظ یاد رکھنے کے لئے اسے اونچی آواز میں دھراتا ہوں					
3.7)When I try to remember a word, I write it repeatedly. میں لفظ یاد رکھنے کے لئے اسے باربار لکھتا ہوں					
3.8)I memorise the spelling of a word letter by letter. میں لفظ کے ہجے حرف بحرف حفظ کرتا ہوں					
3.9)I write both the new words and their Urdu equivalents repeatedly in order to remember them. میں نئے الفاظ کو یاد رکھنے کے لئے ِانکو اور ِانکے اردوترجمعہ کوباربار لکھتا ہوں					
4.1)I remember a group of new words that share a similar art in spelling. میں نئے الفاظ کے ِملتے ُجلتے ِحجوں کے گروپ بنا کر ِانہیں یاد رکھتا ھوں					
4.2)I act out a word to remember it better. میں لفظ کوزیادہ بہترِیاد رکھنے کے لئے ِاسے ِایکٹ کرتا ہوں					
4.3)I create a mental image of the new word to help me remember it. میں نئے لفظ کو یاد رکھنے کے لئے دماغ میں اسکی تصویر بنا لیتا ہوں					
4.4)I associate one or more letters in a word with the word meaning to help me remember it (look has two 'eyes' in the middle). میں لفظ میں موجود ایک یا ایک سے زیادہ حروف کو اس لفظ کے مفہوم کے ساتھ منسلک کرتا ہوں تاکہ اسے یاد رکھ سکوں(مثلاً لوک کے درمیان میں دو آنکھیں ہیں)					
4.5)I visualise the new word to help me remember it. میں نئے لفظ کو یاد رکھنے کے لئےاس کی ذہن میں تصویر بناتا ہوں					
4.6)I associate a new word to a known English word that looks similar. میں نئے لفظ کو پہلے سے معلوم ملتے جلتے لفظ کے ساتھ منسلک کرتا ہوں					
4.7)I remember the spelling of a new word by breaking it into several visual parts. میں نئے لفظ کے ہجے یاد کرنے کے لئے انکو کئی بصری حصوں میں تقسیم کرتا ہوں					
4.8)I remember together words that I sound similar. وہ الفاظ جو ایک جیسی آواز دیں ِانکو میں ایک ساتھ یاد رکھتا ہوں					
4.9)I remember together words that are spelled similarly. ہ الفاظ ِجنکے ہجے ایک جیسے ہوں ِانکو میں ایک ساتھ یاد رکھتا ہوں					
4.10)I associate a new word with known English word that sounds similar. میں یاد رکھنے کے لئے نئے اور پہلے سے معلوم ہم آوازلفظوں کوایک دوسرے سے منسوب کرتا ہوں					
4.11)I deliberately study word-formation rules in order to remember more words. میں الفاظ کو یاد رکھنے کے لئے ِانکی تشکیل کے قوانین کا مطالعہ کرتا ہوں					
4.12)I try to create semantic networks in my mind and remember words in meaningful groups. میں الفاظ کوبامعنی گروپوں میں یادرکھنےکےلئے ذہن میں ِانکا معنوی نیٹورک بناتا ہوں					
4.13)When I meet a new word, I search in my memory and see if I have any synonyms and antonyms in my vocabulary stock. جب میں کوئی نیا لفظ دیکھتا ہوں تو میں اپنے دماغ میں تلاش کرتا ہوں کہ آیا میں اپنے دماغ کے ذخیرہ میں ِاس نئے لفظ کا مترادف اور متضاد رکھتا ہوں					
4.14)I group words into categories(e.g., animals, utensils, vegetables etc). میں الفاظ کےگروپ کی درجہ بندی کرتا ہوں(جیسے جانور، برتن، سبزیاں وغیرہ)					
4.15)When I try to remember a word, I remember the sentence in which the word is used. میں ایک لفظ کو یاد رکھنے کے لئے، اس فقرہ کو یاد رکھتا ہوں جس میں وہ لفظ استعمال ہوا ہو۔					
4.16) I deliberately read books in my area of interest so that I can find out and remember the special terminology that I know in Urdu. میں اپنی دلچسپی والے انگریزی کتب کا مطالعہ کرتا ہوں تاکہ انگریزی کے الفاظ کی وہ خصوصی ِاصطلاحات ِجنکا علم مجھے اردو زبان میں ہے جان سکوں اور ِانکو یاد رکھ سکوں۔					
4.17)I remember the new word together with the context where the new word occurs. میں نئے لفظ کو یاد رکھنے کے لئے نئے لفظ اور جہاں یہ آتے ہیں اس سیاق و سباق کو یاد رکھتا ہوں۔					

4.18)I learn words better when I put them in contexts (e.g., phrases, sentences, etc). میں جب الفاظ کوسیاق و سباق یعنی بامعنی ِفقروں میں ِاستعمال کروں تو ِانکو بہتر سیکھتا ہوں۔					
5.1)I use alternative cues and try again if I fail to guess the meaning of a word. میں کئی اشاروں سے اور ضرورت پڑنے پر بارہا لفظ کا مفہوم اندازہ لگانے کی کوشش کرتا ہوں۔					
5.2)I make a use of the logical development in the context(e.g., cause and effect) when guessing the meaning of a word میں لفظ کا مفہوم اندازہ لگانے کے لئے سیاق و سباق میں موبود منطقی ترقی (مثلاً وجہ اوراثر) کا ِاستعمال کرتا ہوں۔					
5.3)I make use of my common sense and knowledge of the world when guessing the meaning of a word. میں ایک نئے نامعلوم لفظ کے مفہوم کا اندازہ لگانے کے لئے اپنی عقل اور دُنیاوی ِادراک کو ِاستعمال کرتا ھوں۔					
5.4)I check my guessed meaning against the wider context to see if it fits in. میں سیاق و سباق کا تجزیہ کر کے چیک کرتا ہوں کہ ایا اندازہ کئے ہوے لفظ کا مفہوم ِاس میں ٹھیک بیٹھتا ہئے۔					
5.5)I look for other words or expressions in the passage that support my guess about the meaning of a new word. میں نامعلوم لفظ کے مفہوم کا اندازہ لگانے کے لئے پیراگراف میں موجود دوسرے الفاظ اور ُمحاوروں پر غور کرتا ہوں۔					
5.6)I look for any definitions or paraphrases in the passage that support my guess about the meaning of a word. میں نامعلوم لفظ کے مفہوم کا اندازہ لگانے کے لئے پیراگراف میں موجود ُان دیفینیشنز اور تشریحات پر غور کرتا ہوں جو مجھے لفظ کے مفہوم کا اندازہ لگانے میں معاون ہوتے ہیں۔					
5.7)I make use of the grammatical structure of a sentence when guessing the meaning of a new word. میں نامعلوم لفظ کے مفہوم کا اندازہ لگانے کے لئے ِفقرے میں موجود گرائمرکی ساخت کا ِاستعمال کرتا ہوں۔					
5.8)I look for any examples provided in the context when guessing the meaning of a new word. میں نامعلوم لفظ کے مفہوم کا اندازہ لگانے کے لئے سیاق و سباق میں موجود مثالوں کا تجزیہ کرتا ہوں۔					
5.9)I make use of the part of speech of a new word when guessing its meaning. میں نئے نامعلوم لفظ کے مفہوم کا اندازہ لگانے کے لئے اسکے قواعدی اجزاے کلام کو ِاستعمال کرتا ہوں۔					
5.10)I check my guessed meaning against the immediate context to see if it fits in. میں اپنے اندازہ لگاے ہوئے لفظ کے معنی کا سیاق و سباق کے حوالے سے تجزیہ کرتا ہوں تاکہ دیکھ سکوں کہ یہ اس کے مطابق موزوں ہے۔					
5.11) I analyse the word structure (prefix, root, and suffix) when guessing the meaning of a word. میں نئے نامعلوم لفظ کے مفہوم کا اندازہ لگانے کے لئے اس لفظ کی ساخت(سابقہ، جڑ، لاحقہ) کا تجزیہ کرتا ہوں۔					
6.1)I try to read as much as possible so that I can make use of the words I tried to remember. میں زیادہ سے زیادہ ُممکن حد تک پڑھنے کی کوشش کرتا ہوں تاکہ میں ُان الفاظ کا ِاستعمال کرسکوں ِجنکو میں نے یاد رکھنےکی کوشش کی۔					
6.2)I make up my own sentences using the words I just learned. میں نئے سیکھے ہوئے الفاظ کو استعمال کرتے ہوئے اپنے ِفقرے بناتا ہوں۔					
6.3) I try to use the newly learned words as much as possible in speech and writing. میں نئےسیکھے ہوئے الفاظ کوزیادہ سے زیادہ ُممکن حد تک گفتگو اور تحریر میں استعمال کرنے کی کوشش کرتا ہوں۔					
6.4) I try to use newly learned words in real situations. میں نئے سیکھے ہوئے الفاظ کوحقیقی حالات میں استعمال کرنے کی کوشش کرتا ہوں۔					
6.5)I try to use newly learned words in imaginary situations in my mind. میں نئے سیکھے ہوئے الفاظ کوتصوراتی حالات میں استعمال کرنے کی کوشش کرتا ہوں۔					
7.1)I make a note of the meaning of a new word when I think the word I am looking up is commonly used. میں ُاس نئے لفظ کے مفہوم کو نوٹ کر لیتا ہوں جب مجھے لگے کہ وہ لفظ ِجسے میں دیکھ رہا ہوں عام طور پر ِاستعمال کیا جاتا ہئے۔					
7.2)I make a note when I think the word I am looking up is relevant to my personal interest. میں ُاس نئے لفظ کے مفہوم کو نوٹ کر لیتا ہوں جب مجھے لگے کہ وہ لفظ ِجسے میں دیکھ رہا ہوں میری ذاتی ِدلچسپی سے متعلقہ ہے۔					
7.3)I put synonyms and antonyms together in my notebook. میں مترادف اور متضاد الفاظ کو ایک ساتھ اپنی نوٹ بک میں نوٹ کر لیتا ہوں۔					
7.4)I write down the English synonyms or explanations of the word I look up. میں اس لفظ کا مترادف یا تشریح لکھ لیتا ہوں جسے میں دیکھتا ہوں۔					

7.5)I write down both the Urdu equivalent and the English synonyms of the word I look up. میں وہ نیا لفظ جسے سیکھتا ہوں اسکا اردو متبادل اور انگریزی مترادف دونوں لکھ لیتا ہوں۔					
7.6)I make a note when I see a useful expression or phrase. جب میں مفید محاورے اور جملے دیکھوں تو انکونوٹ کر لیتا ہوں۔					
7.7)I take down(make a note of) the collocations of the word I look up. میں نئے نامعلوم لفظ سیکھتے ہوئے الفاظ کی ترتیب کو نوٹ کر لیتا ہوں۔					
7.8) I note down examples showing usage of the word I look up. میں نئے نامعلوم لفظ سیکھتے ہوئے وہ مثالیں جن میں انکا استعمال ہوا ہونوٹ کر لیتا ہوں۔					
8.1) I talk with others on how to increase vocabulary. میں دوسروں سے بات کرتا ہوں کہ انگریزی وکیبلری میں کیسے اضافہ کروں۔					
8.2)When I feel discouraged with vocabulary study, I talk to others. جب میں انگریزی وکیبلری کےمطالعہ سے خود کو حوصلہ شکن محسوس کروں تو دوسروں سے بات کرتا ہوں۔					
8.3)If I don't understand a word in a conversation, I ask its users to explain. اگر مُجھے گفتگو میں کوئی لفظ سمجھ نہ آے تو میں گفتگوکرنے والوں سے اِسکی تشریح پوچھ لیتا ہوں۔					
8.4)I ask other people to correct my pronunciation of new words. میں دوسروں کو اپنی انگریزی کے تلفُظ کی درُستی کرنے کو کہتا ہوں۔					
8.5)I learn a lot of new words from social interactions. میں بہت سے انگریزی کے نئے الفاظ لوگوں کیساتھ میل جول سے سیکھتا ہوں۔					
8.6)I ask for clarification or verification of the meaning of a new word from teacher/fellow students. میں نئے نامعلوم لفظ کے مفہوم کی تصدیق اپنے اُستاد یا ساتھی طلبا سے کرتا ہوں۔					
8.7) I ask others to correct me if they find out I am using the word in correctly. میں دوسروں سے کہتا ہوں کہ اگر میں لفظ کا غلط اِستعمال کروں تو میری اِصلاح کردیں۔					
8.8)I learn new words while working groups/pairs in the class. میں نئی انگریزی وکیبلری انگریزی کی کلاس میں گروپ یا جوڑوں میں اکٹھے کام کرنے سے سیکھتا ہوں۔					

Please share your out of class or extra-curricular activities/strategies which you use to learn English Vocabulary, to learn English or just for pleasure.

9.1)I read English magazines : میں انگریزی رسالہ پڑتا ہوں (check all that apply)	Never	seldom	Sometimes	Often	Always
i. For pleasure.لطف کے لئے					
ii. To learn English انگریزی زبان سیکھنے کے لئے					
iii. To learn English Vocabulary انگریزی وکیبلری سیکھنے کے لئے					

9.2)I read English Newspaper: میں انگریزی اخبار پڑھتا ہوں (check all that apply)	Never	seldom	Sometimes	Often	Always
i. For pleasure.لطف کے لئے					
ii. To learn English انگریزی زبان سیکھنے کے لئے					
iii. To learn English Vocabulary انگریزی وکیبلری سیکھنے کے لئے					

9.3) I watch English movies and plays:میں انگریزی فِلمیں اور ڈرامے دیکھتا ہوں (check all that apply)	Never	seldom	Sometimes	Often	Always
i. For pleasure.لطف کے لئے					
ii. To learn English انگریزی زبان سیکھنے کے لئے					
iii. To learn English Vocabulary انگریزی وکیبلری سیکھنے کے لئے					

9.4)I watch TV programmes broadcast in English:انگریزی میں پروگرام نشریات دیکھتا ہوں (check all that apply)	Never	seldom	Sometimes	Often	Always
i. For pleasure.لطف کے لئے					
ii. To learn English انگریزی زبان سیکھنے کے لئے					
iii. To learn English Vocabulary انگریزی وکیبلری سیکھنے کے لئے					

9.5) I listen to English music: میں انگریزی موسیقی سُنتا ہوں (check all that apply	Never	seldom	Sometimes	Often	Always
i. For pleasure.لطف کے لئے					
ii. To learn English انگریزی زبان سیکھنے کے لئے					
iii. To learn English Vocabulary انگریزی وکیبلری سیکھنے کے لئے					

9.6) I use tele-text or watch programme with English subtitles: میں ٹیلی ٹیکس یا ترجمہ کیساتھ پروگرام دیکھتا ہوں (check all that apply)	Never	seldom	Sometimes	Often	Always
i. For pleasure.لطف کے لئے					
ii. To learn English انگریزی زبان سیکھنے کے لئے					
iii. To learn English Vocabulary انگریزی وکیبلری سیکھنے کے لئے					

9.7)I watch English news daily:میں انگریزی خبرنامہ روزانہ دیکھتا ہوں (check all that apply)	Never	seldom	Sometimes	Often	Always
i. For pleasure.لطف کے لئے					
ii. To learn English انگریزی زبان سیکھنے کے لئے					
iii. To learn English Vocabulary انگریزی وکیبلری سیکھنے کے لئے					

9.8) I watch matches and listen to commentary in English: میں میچوں کی کومینٹری انگریزی میں سُنتا ہوں (check all that apply)	Never	seldom	Sometimes	Often	Always
i. For pleasure.لطف کے لئے					
ii. To learn English انگریزی زبان سیکھنے کے لئے					
iii. To learn English Vocabulary انگریزی وکیبلری سیکھنے کے لئے					

9.9) I listen news on radio in English:میں روزانہ ریڈیوپرانگریزی خبریں سُنتا ہوں (check all that apply)	Never	seldom	Sometimes	Often	Always
i. For pleasure.لطف کے لئے					
ii. To learn English انگریزی زبان سیکھنے کے لئے					
iii. To learn English Vocabulary انگریزی وکیبلری سیکھنے کے لئے					

9.10)I use video conferencing to speak to my friends who are native speakers of English: میں وڈیو کونفرنسنگ کے زریعے اپنے دوستوں جنکی زبان انگریزی ہے سے بات کرتا ہوں (check all that apply)	Never	seldom	Sometimes	Often	Always
i. For pleasure.لطف کے لئے					
ii. To learn English انگریزی زبان سیکھنے کے لئے					
iii. To learn English Vocabulary انگریزی وکیبلری سیکھنے کے لئے					

9.11) I attend and participate in out-of-class events where English language is used as mode of communication. میں کلاس سے باہر تقریبات میں شرکت کرتا ہوں جہاں انگریزی زبان ابلاغ کے طریقہ کے طور پر استعمال کیا جاتا ہے (check all that apply)	Never	seldom	Sometimes	Often	Always
i. For pleasure.لطف کے لئے					
ii. To learn English انگریزی زبان سیکھنے کے لئے					
iii. To learn English Vocabulary انگریزی وکیبلری سیکھنے کے لئے					

Appendix 3.4 Interview (transcribed)

Interview Asked Questions	Answers
Q1) What do you think about the test instructions, did you understand what to do?	Clear instructions. I do not remember the last year test. This year, I found them interesting and I managed to complete them in time.
Q2) Did you perform well?	NA
Q3) How do you learn English vocabulary?	I apply lot of methods to learn English vocabulary. It depends what type of vocabulary I need to learn and then methods are adopted relevant to that specific vocabulary. I learn from course books and text books, I also use guessing and dictionary, I make notes and I revise them lot. I also focus English media.
Q4) Do you learn/focus any particular vocabulary?	I emphasis on course text books and my exam curriculum vocabulary and I also learn vocabulary to improve my English for general communication in real life.
Q5) What do you do when a new/unfamiliar word occurs in text/communication?	First I read the sentence twice and try to guess the meaning from context and then carry on reading and note down this word in my diary for later dictionary consultation.
Q6) How do you check the meaning of a new word (meaning, synonyms, antonyms, usage)?	I look up meaning when I cannot understand the word in a paragraph or in communication. I also check the meaning to confirm that my guess is right or get more information about the guessed word, while checking in monolingual dictionary, I check its meaning, usage, sample sentence or grammatical use, its synonyms and antonyms and then note it down.
Q7) If you don't have dictionary/teacher/friend/internet available for meaning, and unfamiliar words occur, what will you do?	I always check by guessing first and I am good in guessing, I mean whenever I check meaning in dictionary to confirm if my guess was right and to get more detail, my guess is always or most of the time right. I read it twice and try to realise the situation and its meaning in the context. Then I read the whole text to see if it fits in the context, I also try to get clues from the grammar, word structure, given examples and definitions.
Q8) [If YES to Q7] What do you do, or how do you guess the meaning of the word?	
Q9) What do you do after checking the meaning? Q10) [Depending on a reason to Q9] How do you keep the record of the newly learned words (if you don't make their lists)? Q11) [Depending on a reason to Q8-9] How do you prepare your notes or how do you do note taking of vocabulary items?	I make my notes, I prepare lists and keep them in my diary. I make my own sentences which I can use in my real-life situations and in exam. I make lists and write down the meaning, synonyms and antonyms. Then I write its grammar like different farms. Then use it in my own sentences. I have two diaries, one for general and one for course vocabulary. As I said before, I make lists, put similar or opposite meanings together in my note book, write down details. Most of the words have different meaning in different context, So I write down each sentence in each context.
Q12) What strategy do you apply to memorise/remember the word/ to remember the meaning, spelling?	I revise my lists. I remember the context. I also make images in my head and I also cut word in parts to remember the spelling. I pronounce it and read it again and again. I try to use newly learned words in communications
Q13) What method do you use to activate (revision to remember or learn) vocabulary?	I am fond of reading and these words come again and again and in this way, they get revised, I try to use new words in my own sentences, I use them in communication, oral or written. I use them in presentations or talking to my family and friends.
Q14) Do you learn vocabulary by social interaction/ or by others how do you do or can you explain this? If so, can you explain how you do so?	Our teacher encourages us to participate in communication tasks, role play, group discussions I learn vocabulary in class when talk with others, and share our knowledge. I also chat and ring my friends and cousins in London which enhances my vocabulary. I also contribute out of class activities where we communicate in English.
Q15) What strategies do you apply to learn course-related vocabulary if there are any?	I read lot, guessing and dictionary, then I note down the new words and revise them and use them in communication. I watch English TV.
Q16) Are there any other factors/strategies which help you to learn your vocabulary? Q17) What strategies do you apply to learn general vocabulary if there are any?	Reading English newspapers, novels, magazines, watching English movies, TV, watch English programme with Urdu subtitle, speaking to oversee cousins and listening to English music.
Q18) What strategy in your opinion is the most beneficial in learning vocabulary?	I think nothing is better or best, collaborated methods.

Appendix 3.5 Structured weekly diary reports for vocabulary learning

Please share your English vocabulary learning experience (Between) **You will need either to choose the most relevant variant(s) (please, tick(yes) or cross (no)) or state/specify your answer (if needed) on the provided line**	
1) What kind of English vocabulary did you focus on learning this week?	**Please response below**
1.1) Vocabulary related to my CA course	
1.2) General Vocabulary	
1.3) Both	
2) What was your pattern or schedule of English vocabulary learning this week?	**Please response below**
2.1) How many hours did you spend to learn course-related vocabulary daily this week?	
2.2) How many hours did you spend to learn general vocabulary daily this week?	
3) How did you learn English vocabulary this week? (you can choose several options below)	
3.1) What did you do when unknown word occurs while reading or listening?	**Please response below**
a) Guessed the meaning of unknown word from its context during the English lesson	
b) Guessed the meaning of unknown word from its context out of class during self-study	
c) Guessed the meaning of unknown word from used words, prefix, suffix, grammatical clues during the English lesson	
d) Guessed the meaning of unknown word from used words, prefix, suffix, grammatical clues out of class during self-study	
e) Asked meaning from teacher/fellow student	
f) Checked from dictionary straight away	
g) After guessing, record it down for confirmation/notes preparation	
3.2) How did you check/confirm the meaning of the unknown word?	**Please response below**
a) Consulted dictionary during English lesson	
b) Consulted teacher/fellow student during English lesson	
c) Consulted dictionary while doing out of class self-study	
3.3) What was/were the aim(s) of consulting a dictionary?	
a) To check the meaning of unknown word	
b) To get details such as grammar, usage, pronunciation etc	
c) To confirm the guessing	
d) To get detailed information to prepare notes	
e) If other, please specify	
3.4) How did you do record keeping of newly learned words this week?	**Please response below**
a) Prepared notes for general English vocabulary	
b) Prepared notes for course-related English vocabulary	
c) Prepared notes during the English lesson	
d) I prepared notes during out of class self-study	
3.5) What was/were your aim(s) to prepare vocabulary notes?	
a) To memorise the new vocabulary item	
b) To revise the new vocabulary item	
c) To pass CA exam	
d) To improve general English vocabulary	
e) To improve course-related vocabulary	
f) If other, please specify	
3.6) How did you prepare English vocabulary notes?	
a) Note down the meaning of new word	
b) Note down by using it into sentences	
c) Note down in vocabulary note book	
d) Computerised	
e) Note down in the margin of text book	
3.7) How did you memorise English vocabulary this week?	**Please response below**
a) First understood the meaning/definitions of the word	

b) Guessing helped me to remember the meaning and context of the word	
c) Used in a sentence to remember the word	
d) Repeated the word orally, wrote down, read it again and again	
e) Revised and rehearsed the vocabulary lists	
f) To memorise the word, I created image/picture of this word in my mind	
g) Tried to remember the context where it occurred to memorise and remember the word	
h) Memorise the spelling/pronunciation	
3.8) How did you activate English vocabulary to keep it fresh in your memory?	**Please response below**
a) Kept using it in communication	
b) Kept using it in course-related tasks like essay, letter, memo writing	
3.9) How did you learn English vocabulary by using extra-curricular methods/strategies (you can choose several options):	**Please response below**
a) Reading English magazines	
b) Reading English Newspapers	
c) Watching English movies/plays	
d) Watching English programmes	
e) Listening to English music	
f) Watching programmes with English tele-text/subtitle	
g) Watching and listening to English news on TV	
h) Watching matches and listening to English commentary	
i) Listening news on radio	
j) Video conferencing with native speakers of English	
k) Participating/attending out of class events/exhibitions where mode of communication was totally English	
3.10) Please specify in the space below if you applied any other method to learn English vocabulary this week not mentioned above or just comment on your adopted methods and VLSs (if use) to learn vocabulary.	

Appendix 3.6 KMO

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.977
Bartlett's Test of Sphericity	Approx. Chi-Square	104977.304
	df	5460
	Sig.	.000